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Payload Data Library
User's Guide

Issue A

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INTERNATIONAL SPACE STATION

PAYLOAD DATA LIBRARY
USER'S GUIDE

D683-35473-01

MARCH 21, 2002

Boeing Space and Communications Group
Human Space Flight and Exploration
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ABSTRACT

This User's Guide for the International Space Station (ISS) Payload Data Library (PDL) documents the information necessary for approved users to utilize the PDL application. It provides an overview of the PDL architecture as well as system requirements for the different platforms supported. In addition, instructions are included for navigation through the system, entering data, and generating output reports.

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SECTION 1, INTRODUCTION

1.1 SYSTEM OVERVIEW

The Payload Data Library (PDL) is an electronic database system developed to support the Engineering and Operations Integration (E&OI) personnel in collecting and managing payload data. The primary function of PDL is to provide a convenient method for collection, processing, managing, and distribution of payload information necessary for payload complement integration and for preparation of integration requirements reports. PDL is configured as a Web Enabled system utilizing Oracle software and is accessible to the user via the Internet. The user may obtain a user account and password by accessing the PDL Home Page on the World Wide Web (WWW) at http://pdl.hosc.msfc.nasa.gov.

Interfacing between PDL and other ISS databases is accomplished by using data file transfers over various data networks as defined in the applicable Interface Control Document (ICD).

1.2 SYSTEM REQUIREMENTS

The PDL web client software is compatible with Internet Explorer 5, Netscape 4, Windows 95, Windows NT, and Mac workstations the level of a PowerPC and higher. See the sub-sections below for specific platform system requirements.

1.2.1 IBM-PC

A minimum system configuration to run this web client software on an IBM-PC compatible computer is Windows 95, or Windows NT with an 80486 processor (266 MHz), 64 MB RAM, an 800 x 600 resolution color monitor with 16 colors, 10 MB of available disk space, Internet Explorer 5 (strongly recommend), Netscape 4, and a 56 K modem (recommend DSL or Cable Modem or Ethernet connection). The PDL software operation cannot be guaranteed if your system does not meet these minimum requirements.

1.2.2 Macintosh-PowerPC

A minimum system configuration to run this web client software on a Macintosh is a PowerPC processor using Mac OS System 8.X, 64 MB RAM, an 800 x 600 resolution color monitor, 10 MB of available disk space, Internet Explorer 5, and a 56 K modem (recommend DSL or Cable Modem or Ethernet connection). *NOTE: Netscape can't be used on the Mac because of problems with setting up the Java plug-in.* The PDL software operation cannot be guaranteed if your system does not meet these minimum requirements.

1.2.3 Plug-Ins

The following plug-ins are required to run the web client software:

A. J-Initiator – Internet Java applets for PC users

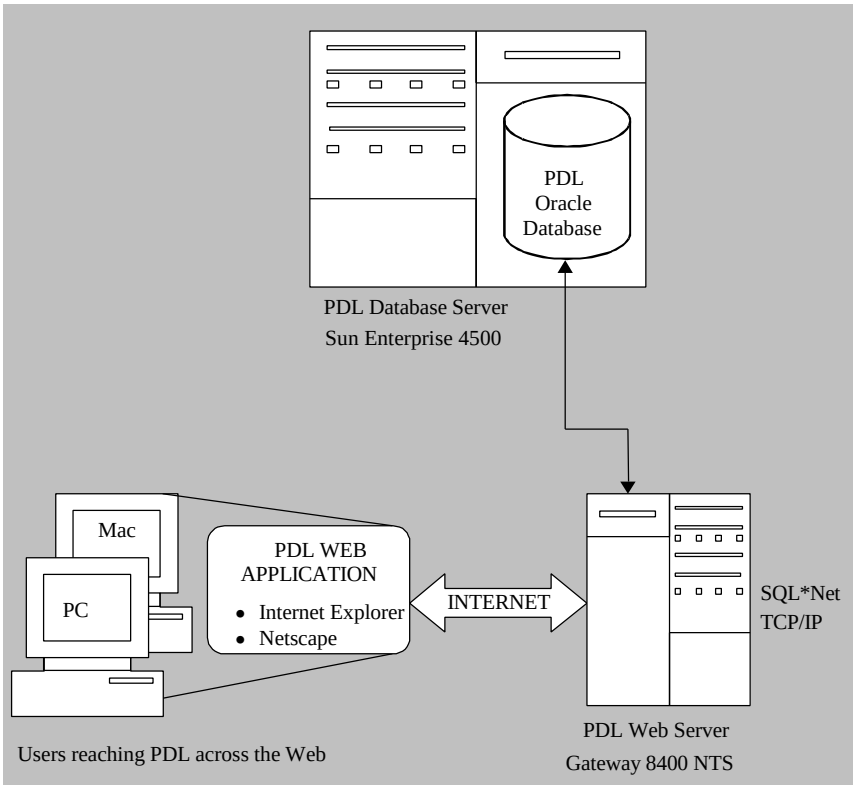
B. MacOS Runtime for Java (MRJ) – Internet Java applets for Mac users

C. Adobe Acrobat Reader – For displaying documents in PDF format

D. Decompression Software (i.e., STUFF-IT EXPANDER) - For decompressing files in G-ZIP format

1.3 WEB-ENABLED TECHNOLOGY USED IN PDL

The PDL database uses Web-Enabled technology to implement a user-friendly, quick-response data collection and management system. Figure 1-1 depicts the PDL Web-Enabled



configuration.

FIGURE 1-1 WEB-ENABLED TECHNOLOGY IN THE PDL

Although a detailed understanding of this technology is not necessary to use the PDL, you may find the following information useful.

The webserver for the PDL system is a Gateway 8400 NTS and the database server portion of the PDL system is a Sun Enterprise 4500. Both machines are located at the Marshall Space Flight Center (MSFC) in Huntsville, Alabama. The Oracle Relational Database Management System (RDBMS) runs on this server and will be kept up to date with the latest version of the database. The data that you enter into the PDL will be stored, managed, distributed, and archived on this server. Daily-automated backups ensure that your data is not lost as the result of any anomaly in server operations.

The PDL web client system is an application that islaunched from the PDL Home Page on the web. After entering your user ID and password, your computer is then connected to the PDL server. The web client application will allow you to retrieve and update data stored on the server. To ensure that the latest data is available to all users, no data is stored on your local computer.

1.4 USER REQUIREMENTS

The PDL web client application utilizes a Graphical User Interface (GUI) to provide an easy and consistent means of manipulating data; however, an understanding of the following functions associated with a GUI is required:

A. Using system browsers for navigation

B. Using a mouse and a pull-down menu

C. Using a Navigation Tree

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SECTION 2, GUIDELINES

2.1 PAYLOAD BREAKDOWN COMPONENTS

All data collected within the PDL is divided into data sets for easy navigation. These data sets are currently defined as Integration Agreement, ICD/Payload Verification Plan (PVP), CDH, Configuration, Extra Vehicular Activity (EVA), Extra Vehicular Robotics (EVR), Grnd Data Srvcs, Kennedy Space Center (KSC) Support, KSC Technical, Operations, and Training. Figure 2-1 depicts an example of the payload data set breakdown components.

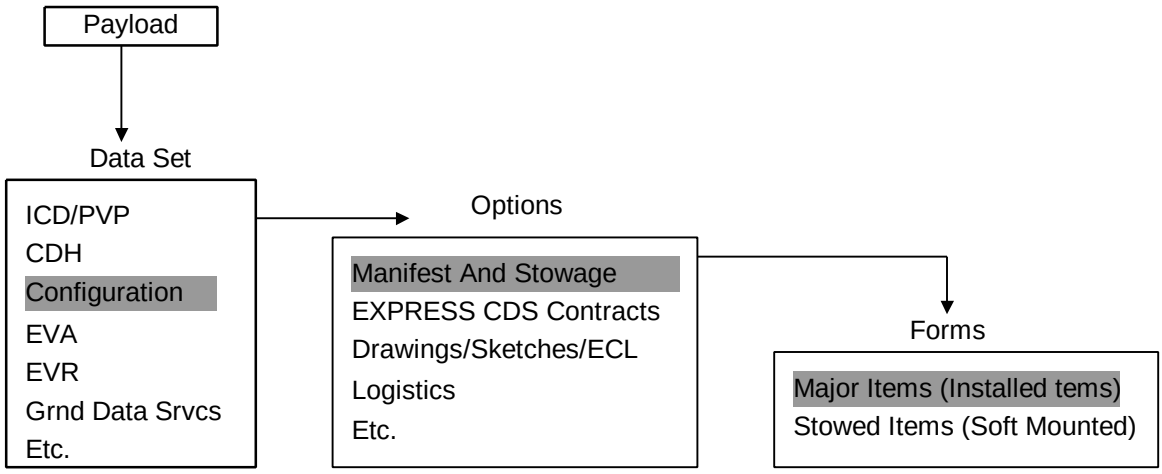

FIGURE 2-1 PAYLOAD BREAKDOWN COMPONENTS

2.2 PAYLOAD IDENTIFICATION (ID)

The PDL uses the parameter format specified by the User Mission Database (UMDB) for payload identification number definition. The UMDB parameter format is:

AAnnn.mmB

AA - This is the two-letter code that represents the payload owner. The first digit specifically represents the partner (N = NASA, J = NASDA, E = ESA, C = CSA), and the second digit specifically represents the organization (C = Commercial, for example). So ESA, Commercial organization, would be EC for the first two digits.

Nnn - This is a three digit number, generated automatically by the UMDB, which represents the 'nth' payload of this type. So the first payload of type EC would be EC001; the second would be EC002, etc.

Mm - This is a two digit number, generated automatically by the UMDB, which represents a subpayload. The first time a payload record is created, this number is 00. If another subpayload is created in the UMDB, then a new payload record is created with the same payload ID, but this number is incremented by one to 01. The next subpayload created in the UMDB will be 02.

B - This one digit character can be one of the following: "A" for attached payloads or "P" for pressurized payloads. This character is automatically assigned when the payload is created as an attached or pressurized payload.

2.3 DATA DISTRIBUTION

There are several end users that utilize payload information collected in the PDL. These end users will receive information via database exports or File Transfer Protocols (FTP). An ICD between PDL and the end users will specify the format of the data to be transferred and the method of transfer. The following documents define the planned interfaces with the PDL:

A. SSP 50189A - Interface with the Johnson Space Center (JSC) User Mission Database and the JSC Tactical Planning System.

B. D683-21415-1 - Interface with the MSFC Payload Software Integration and Verification Database.

C. ICD-3-60056B - Interface with the MSFC Huntsville Operations Support Center (HOSC) Command/Telemetry Database.

D. SSP 50298 - Interface with the JSC Vehicle Master Database.

E. Interface with the KSC Operations and Maintenance Requirements and Specifications (Document number not currently assigned).

F. Interface with the ESA Columbus Payload Database (Interface not currently defined).

G. Interface with the National Space Development Agency of Japan (Interface not currently defined).

H. Interface with the Russian Space Agency Database (Interface not currently defined).

SECTION 3, USING THE PAYLOAD DATA LIBRARY

All figures included in this section are from theweb client application using the PC and Internet Explorer 5. Not every screen is documented in this section, only screens that provides the overall functionality of PDL.

3.1 STARTING THE WEB CLIENT APPLICATION

Users who already possess a PDL account can run the web-based version of the PDL client. The PDL website can be accessed through the Internet at the address: http://pdl.hosc.msfc.nasa.gov. The web page is displayed as shown in Figure3-1. The top portion of the PDL web page contains a menu bar, which is always displayed when the PDL website is up. Once selected some menu items show additional choicesbeneath the main menu items. Additional uses of the PDL website are addressed in Section 4 of this document.

Once selected the *Web Client* menu item from the navigation menu bar displays the *Getting Started, Start PC Web Client,* and *Start Mac Web Client* options. To launch the web client you must first download Oracle's J-Initiator or Mac OS Runtime for Java (MRJ) plug-ins. These Java plug-ins can be found under the *Software* menu item on the navigation menu bar. The J-Initiator is a plug-in for either Internet Explorer or Netscape Navigator for the PC, and MRJ is the plug-in for the Mac. Once you have the plug-in, you can click on the *Start PC Web Client* or *Start Mac Web Client* option to launch the web application depending on the platform you are on.

The plug-ins and the web client are discussed in more details in Sections 4.2.2 and 4.2.5, respectively.

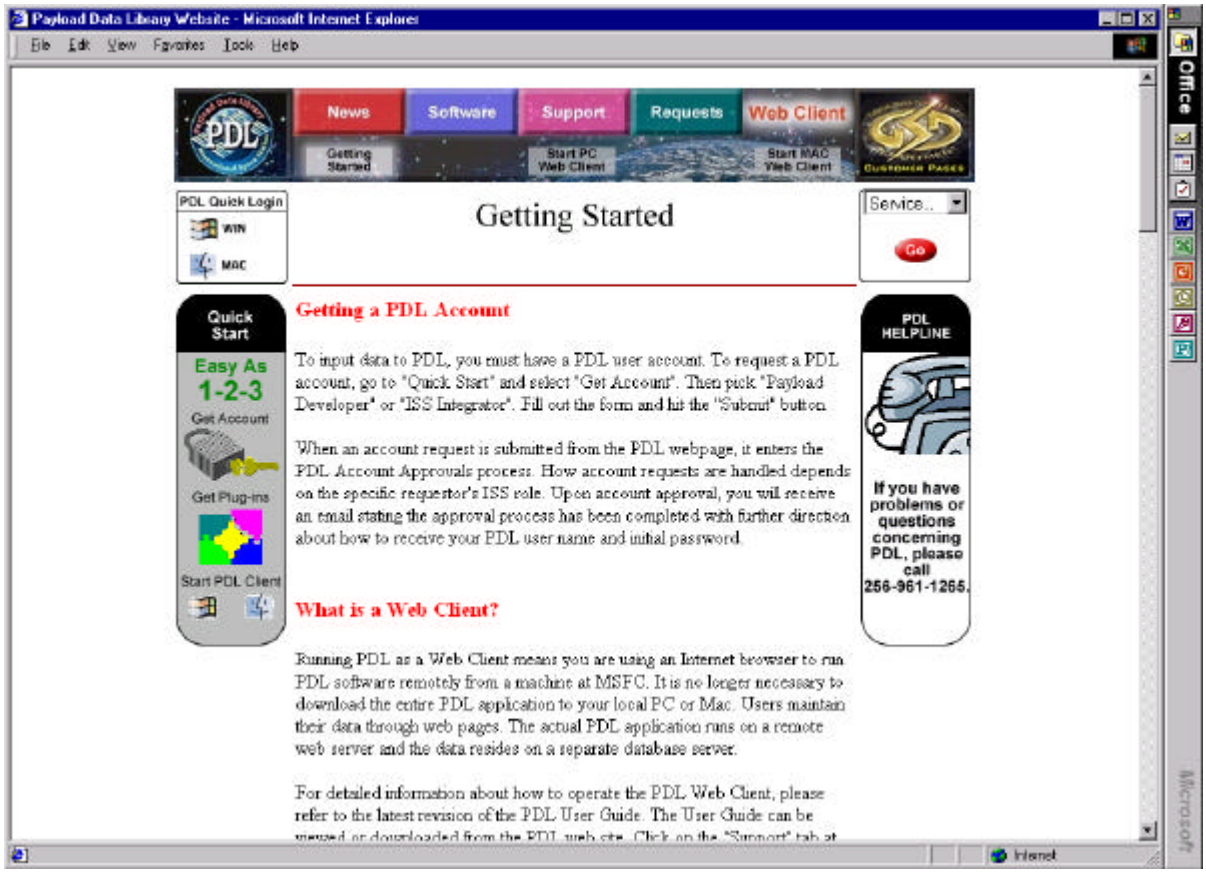

FIGURE 3-1 PDL WEB PAGE

3.2 LOGGING ON

After successfully launching the appropriate web client,the first screen asks you to log on to the PDL server. This screen, shown in Figure 3-2, consists of two fields (*Username* and *Password*) and three buttons (*Exit*, *Change Password*, and *Logon*). Clicking the *Exit* button exits the PDL web application, while the *Logon* button attempts to log onto the PDL server using the *Username* and *Password* entered. You will also find the PDL Help Linetelephone number on this screen.

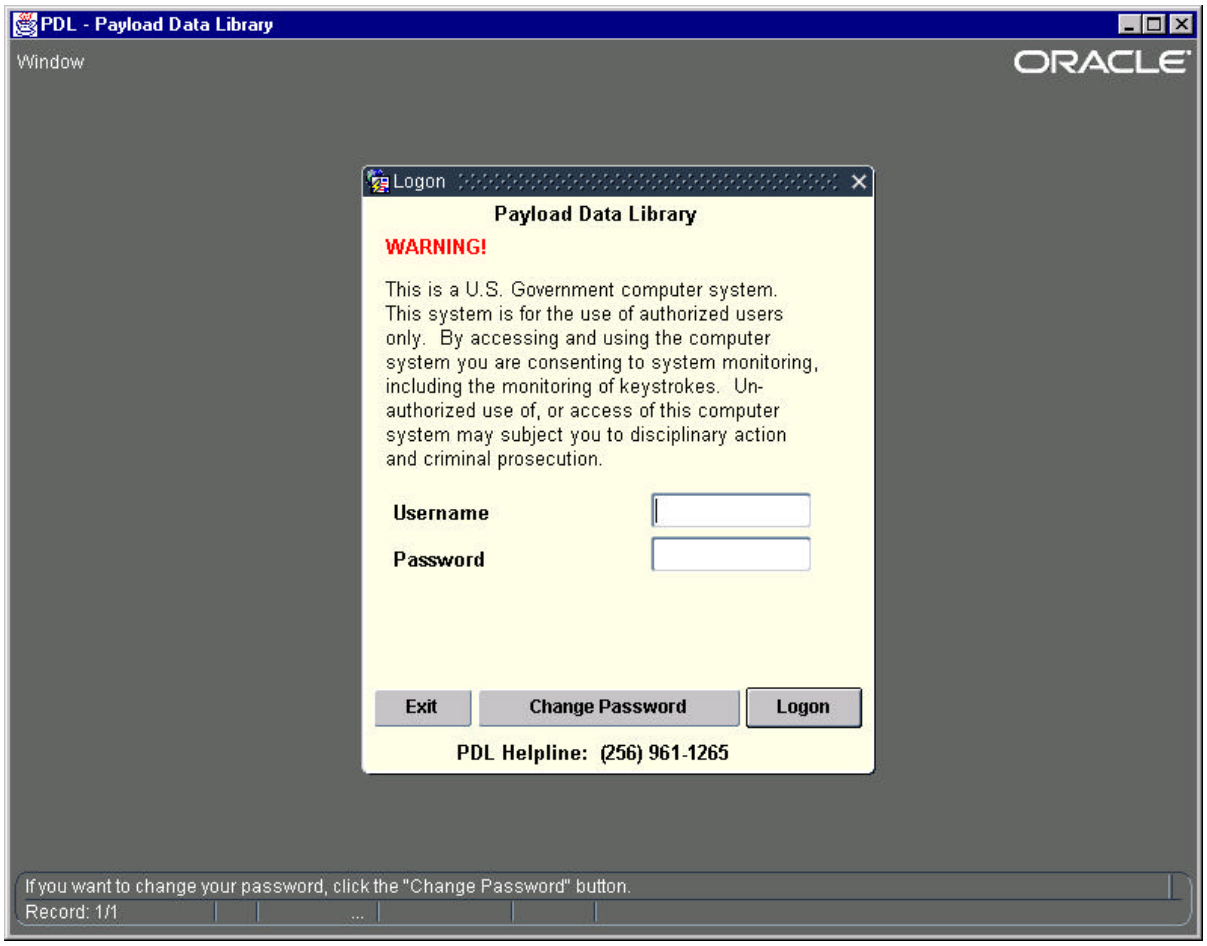

FIGURE 3-2 LOGGING ON

The first time you access PDL, use the temporary password assigned upon account approval. You must enter a new password within three logons. Your new password must not begin with a number and should be alphanumeric not exceeding 30 characters. You are required to change your password every 60 days. The system will display a reminder message 14 days prior to your current password expiration. To change or enter a new password, click the *Change Password* button. Figure 3-3 shows the logon screen in the change-password mode. Two new fields (*New Password* and *Verify New Password*) and a new button (*No Change*) appears. If you decide not to change your password, click the *No Change* button to return to the first Logon Screen. Otherwise, enter your new password in both of these fields and click the *Logon* button to change the password and connect to the PDL server. Use the tab key or the mouse to move the cursor from field to field on the screen.

Each user is given access privileges to certain areas of PDL based upon their account profile. There are three different levels at which an account may be established. They are Private, Integrated, and Controlled. The Private level is used by the Payload Developers (PD) to initially enter data describing a payload. For accounts at this level, all data sets, options, and forms are enabled; however, a user is only granted write privileges for the disciplines indicated in the user's account profile. At the Integrated level, only options that have been promoted from the Private level will be enabled. A user is only allowed to change, promote, and/or demote discipline data as determined by the user's account profile. The controlled level is used by Configuration Management personnel. At this level, data can only be changed via a directive approved by a data set controlling authority such as a Control Board or Review Panel.

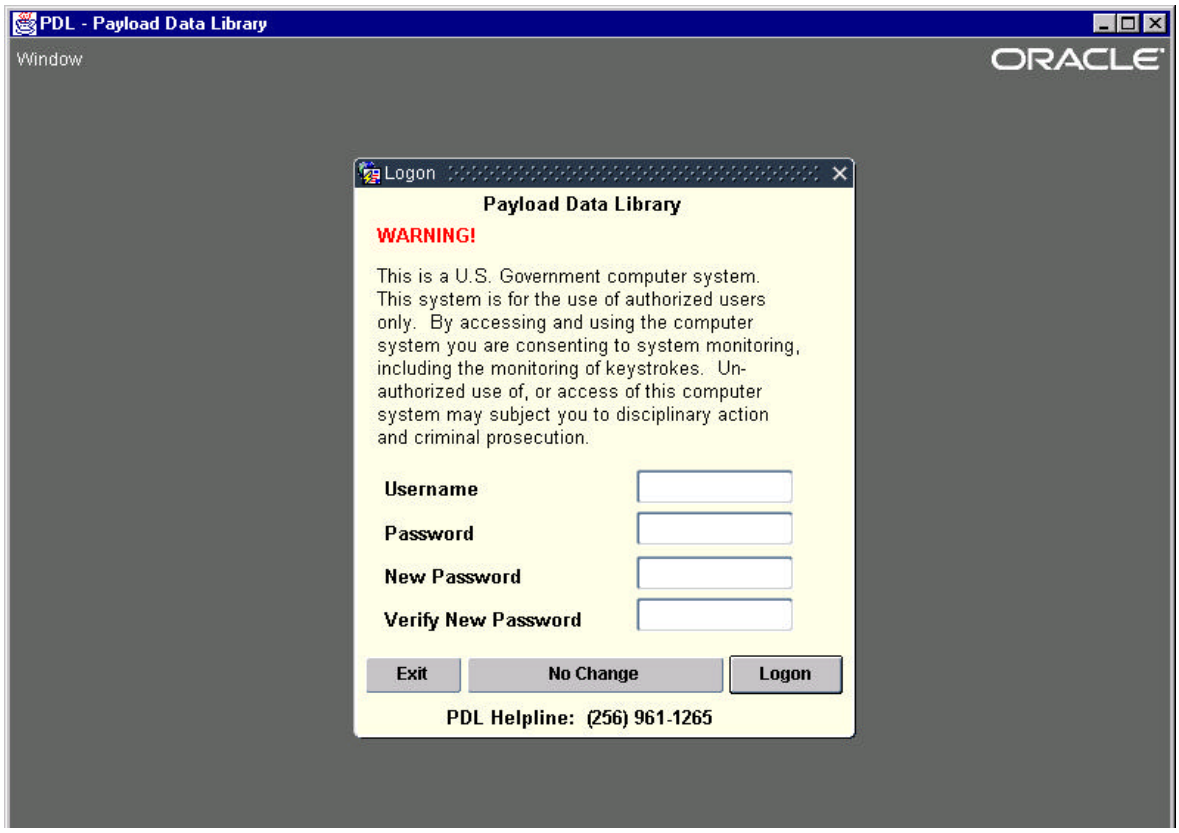

FIGURE 3-3 CHANGING A PASSWORD

3.3 SELECTING A PAYLOAD, FLIGHT, AND INCREMENT

Once you have successfully logged on to the PDL Server the PDL Payload Selection Screen, shown in Figure 3-4, appears and is easily recognized by the Payload Types (*ALL*, *EXPRESS*, *PRESSURIZED*, *WORF*) radio button selections, the *Payload*, *Increment*, *Flight*, and *KSC Processing Type* pop-list selections. The *KSC Processing Type* is for KSC Support Only. The *Launch Date* and *Launch Minus From Today* fields are automatically populated based on the previous selection of the payload, increment, and/or flight.

The *C&DH_Only* button will provide access to the Command and Data Handling (C&DH) screens including EXpedite the PRocessing of Experiments to Space Station (EXPRESS) and Window Observational Research Facility (WORF). These screens will be discussed in greater detail in Sections 3.11 through 3.16 of this document.

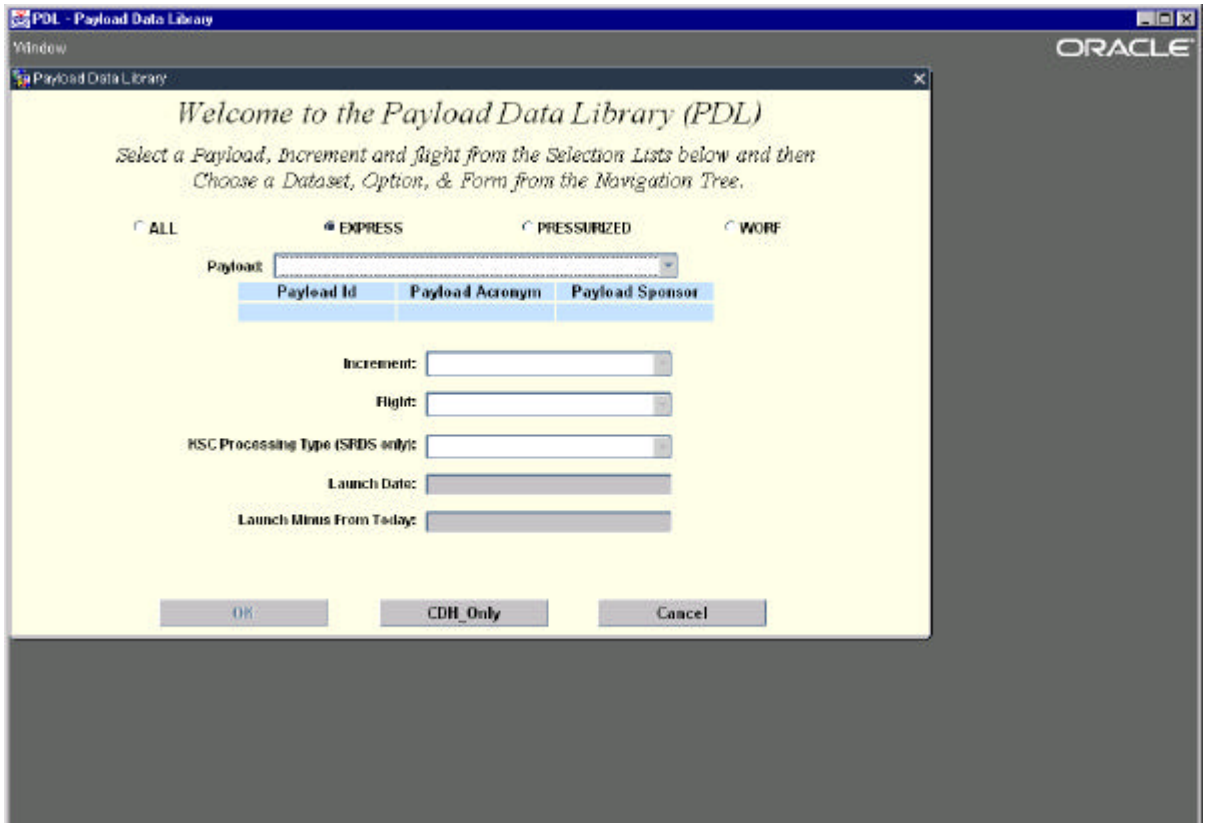

FIGURE 3-4 PDL PAYLOAD SELECTION SCREEN

With the exception of the C&DH dataset, to select a payload, select the payload type (*EXPRESS*, *PRESSURIZED*, *WORF*) then move the cursor to the *Payload* selection pop-list

box. Click and hold to expand the list. When the *ALL* is selected, the *Payload* selection pop-list will display all of the available payloads. Move the cursor to the desired payload and release. When the new payload is selected, the *Payload ID*, *Payload Acronym*, and *Payload Sponsor* fields are automatically displayed below the *Payload* selection pop-list. The *Increment*, *Flight*, and *KSC Processing Type* can be selected in the same manner as described. Once a payload and all other applicable information (i.e., increment and flight) have been selected as shown in Figure 3-5, click the *OK* button and you are ready to begin your selection of the Dataset, Option, and Form from the Navigation Tree.

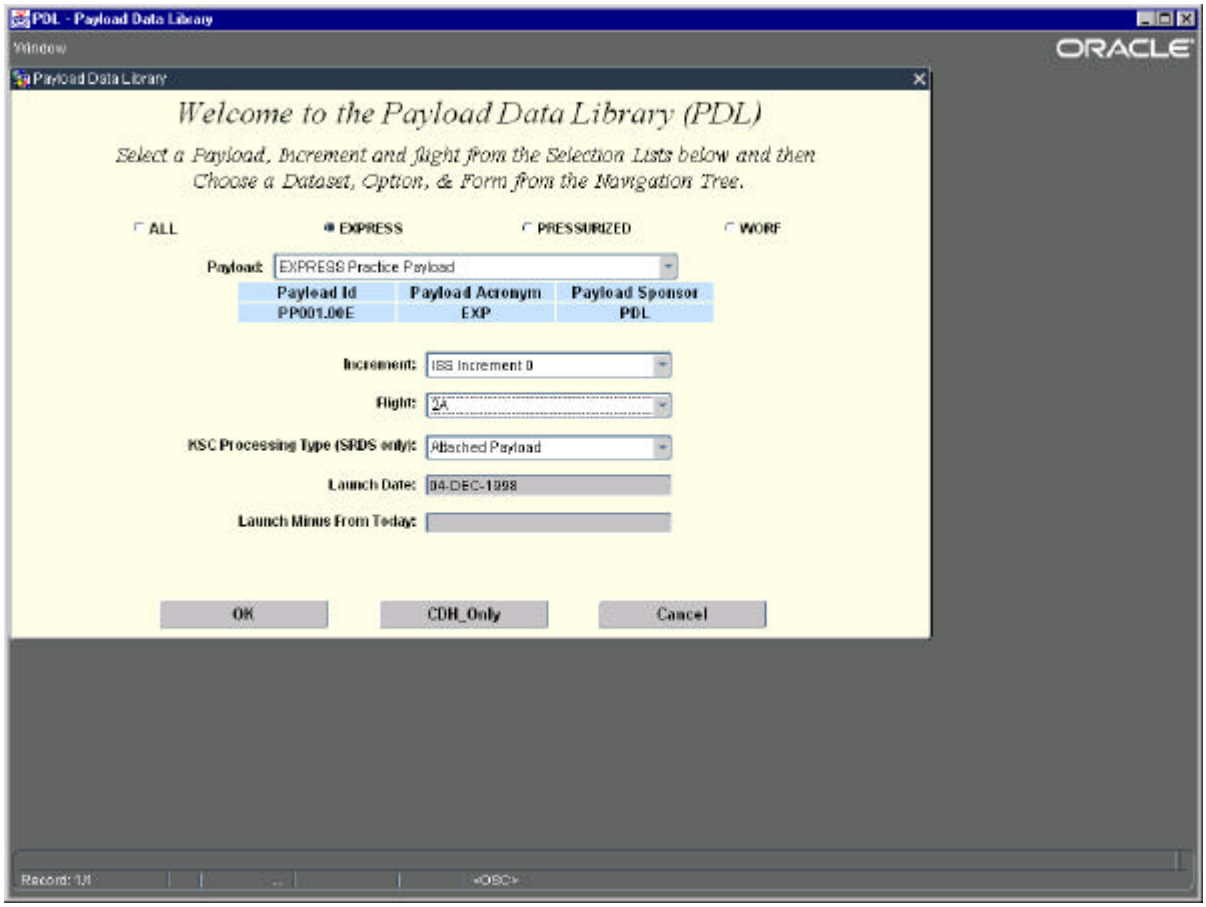

FIGURE 3-5 PAYLOAD, INCREMENT, AND FLIGHT SELECTION

3.4 UNDERSTANDING THE MAIN MENU SYSTEM

With the exception of the C&DH dataset, after successfully selecting a payload, flight and/or increment, the PDL web application main menu bar is displayed at the top of the screen

as in Figure 3-6. The PDL web application main menu bar consists of *File*, *Edit*, *Help*, and *Window* menus. These menus are discussed in the following subsections in greater detail.

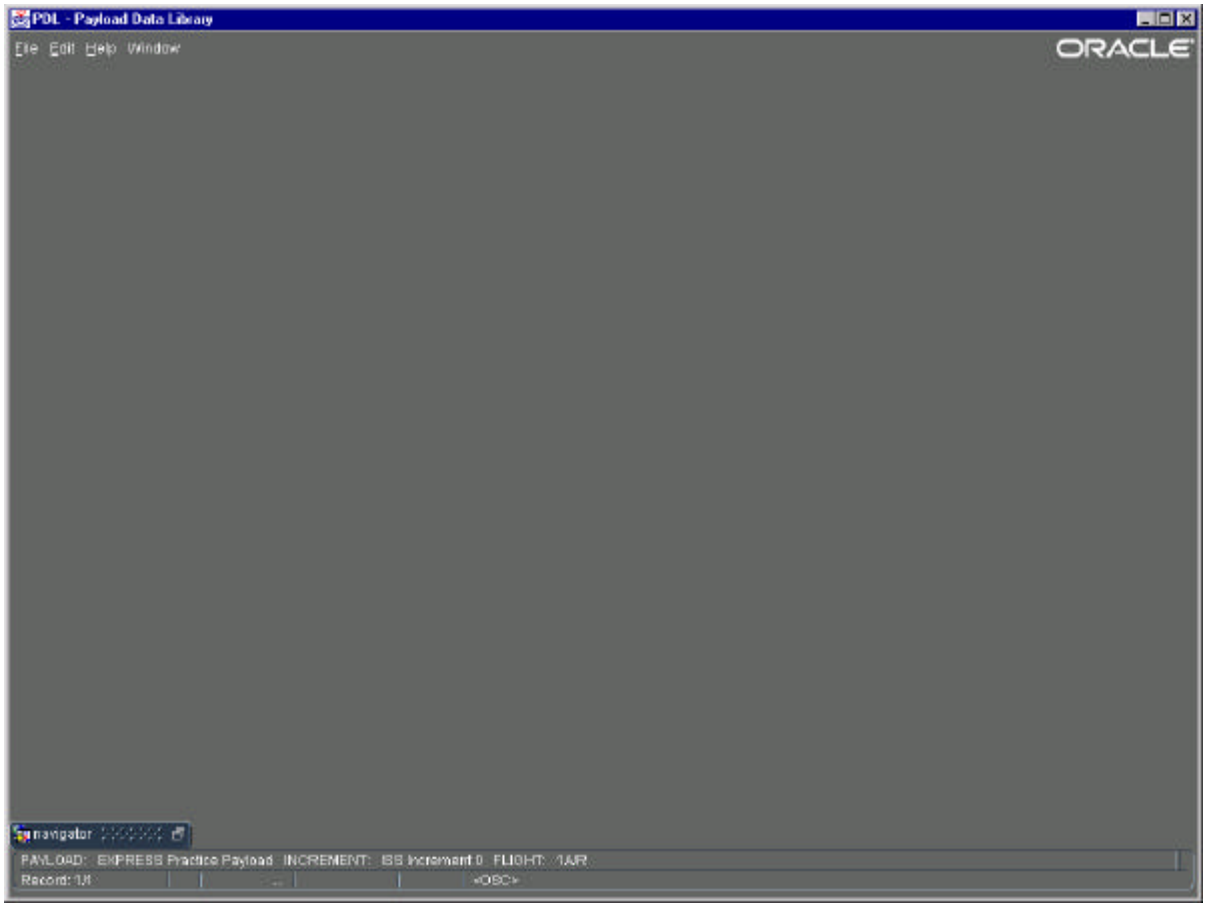

FIGURE 3-6 PDL MAIN MENU SYSTEM

3.4.1 File Menu Selections

The pull-down items under the *File* menu include *Payload Criteria*, *User Profile*, *Reports*, *My RTF Reports*, *My ASCII Reports*, *Address Book*, *Promote/Demote*, and *Quit* as shown in Figure 3-7A. If a form is active and displayed then the File menu will display *User Profile*, *Rebuild Tree*, *Address Book*, *Print*, and *Quit* as shown in Figure 3-7B. These menu selections are discussed in more detail in the following subsections.

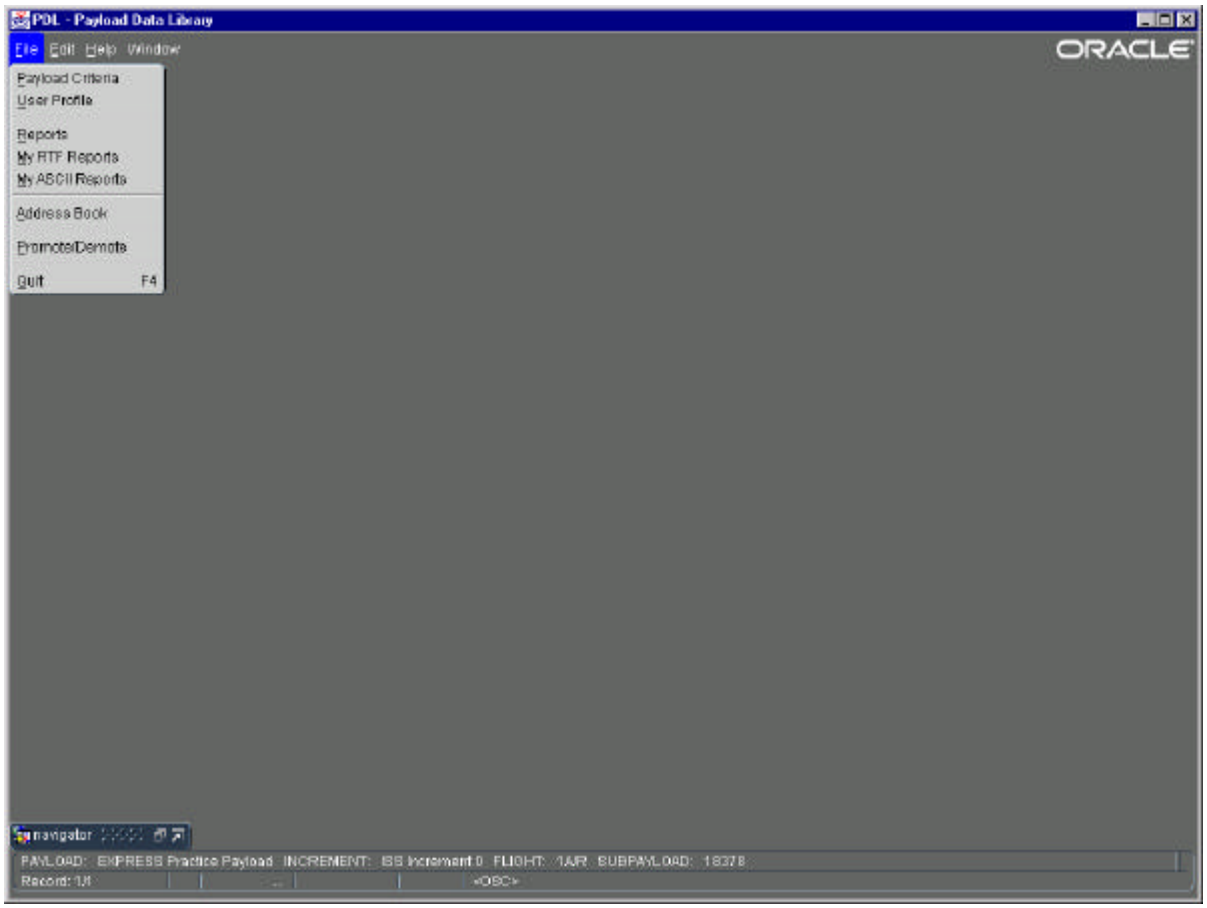

FIGURE 3-7A FILE MENU SELECTIONS

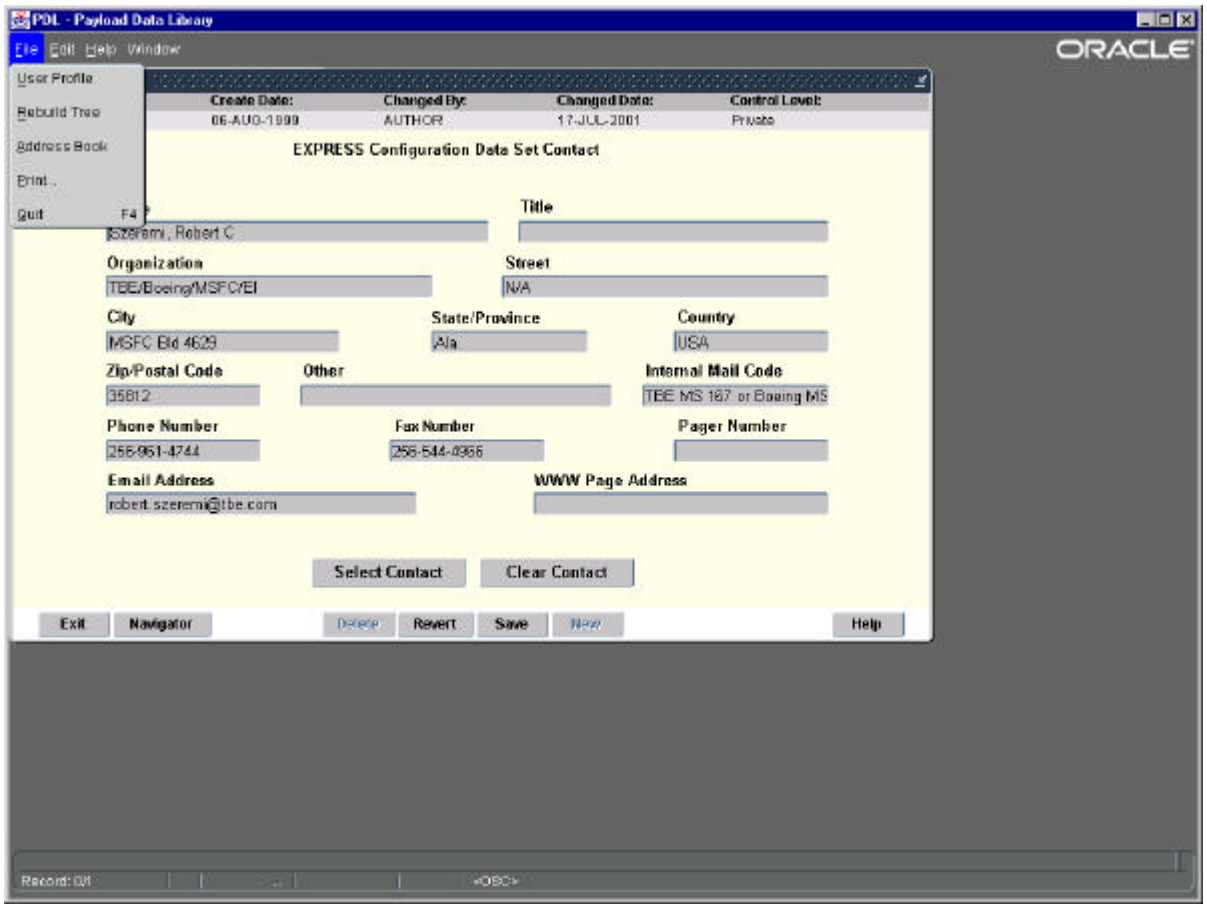

FIGURE 3-7B FILE MENU SELECTIONS WITH AN ACTIVE FORM

3.4.1.1 Payload Criteria

The *Payload Criteria* menu selection item will redisplay thePayload Selection Screen as shown in Figure 3-4.

3.4.1.2 User Profile

The *User Profile* menu selection item allows the user the ability to change their profile. The User Profile screen as shown in Figure 3-8 will appear. The screen displays your access to payload and data set information. This access is determined by the data you provided in the account request form. There are three sections on this screen. The *User Profile* section displays your access to payload and data set information. This access is determined by the data you provided in the account request form. The *PDL System Messages*

section is used to send individualized messages to you from the PDL DBA. The *What's New* section displays information messages of general interest such as payloads and flights that have been added to the PDL database. At the bottom of the screen are two buttons, the *Edit Address Info* button and the *Continue* button. The *Continue* button will return to the previous screen.

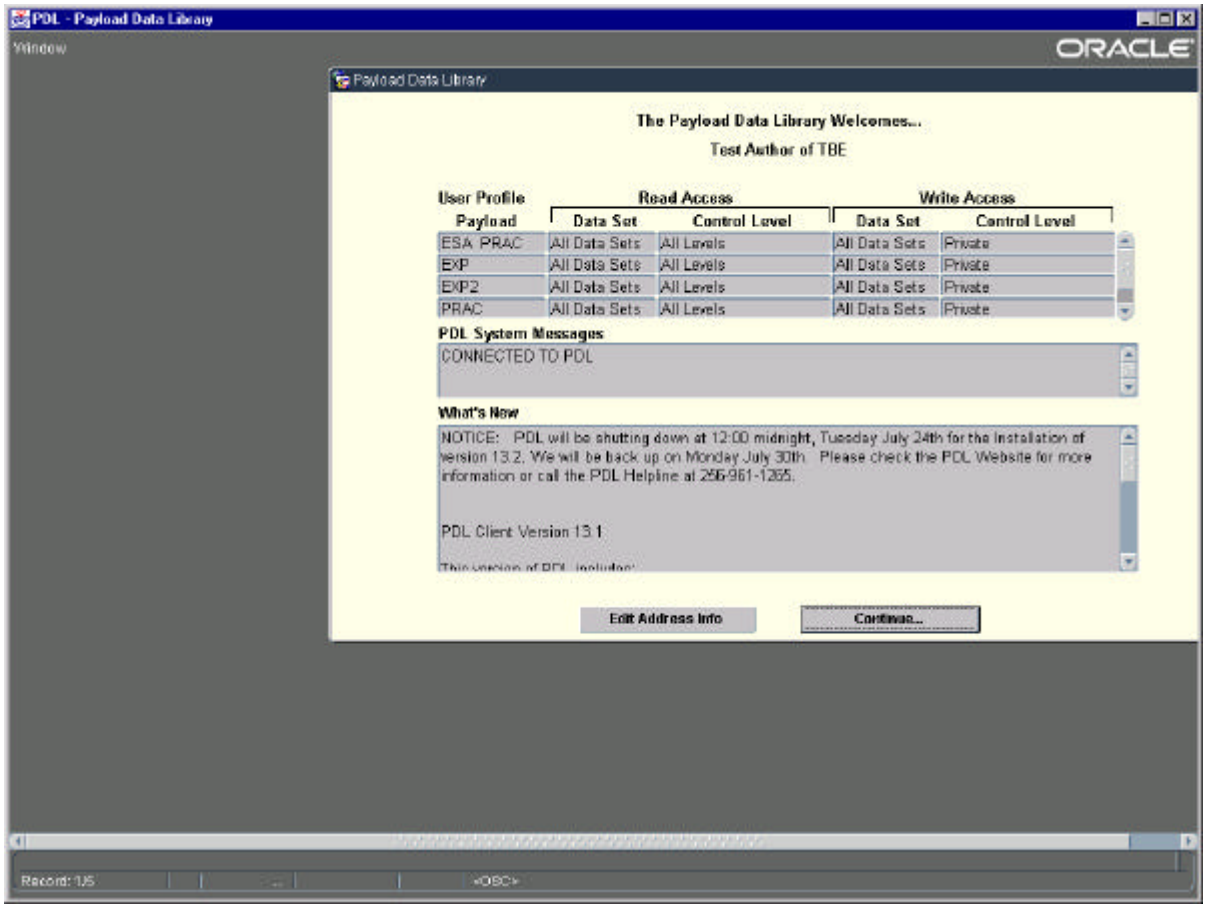

FIGURE 3-8 USER PROFILE SCREEN

When you click the *Edit Address Info* button, the Contacts Information Screen appears with your current account information as shown in Figure 3-9. If the data for your account has changed, correct it and click the *Save* button. To add a new contact, click the *New* button and enter the new information. After you are finished, click the *Save* button. The information is stored for later reference. You may use the *Find* button to locate another

contact. When you click this button, the Address Book pop-up as shown in Figure 3-10 allows you to either select a contact from a list or enter a name in the *Find* box. Use the "%" symbol as a wildcard character. Click the *Find* button to begin the search. Click *OK* when finished. The contact information for the name selectedis displayed. After saving all changes, click the *Exit* button to return to the previous screen. To delete a record of information from the Contacts Information click on the *Delete* button. A message will be displayed to confirm deletion. The *Clear* button will remove all information within each field on the form.

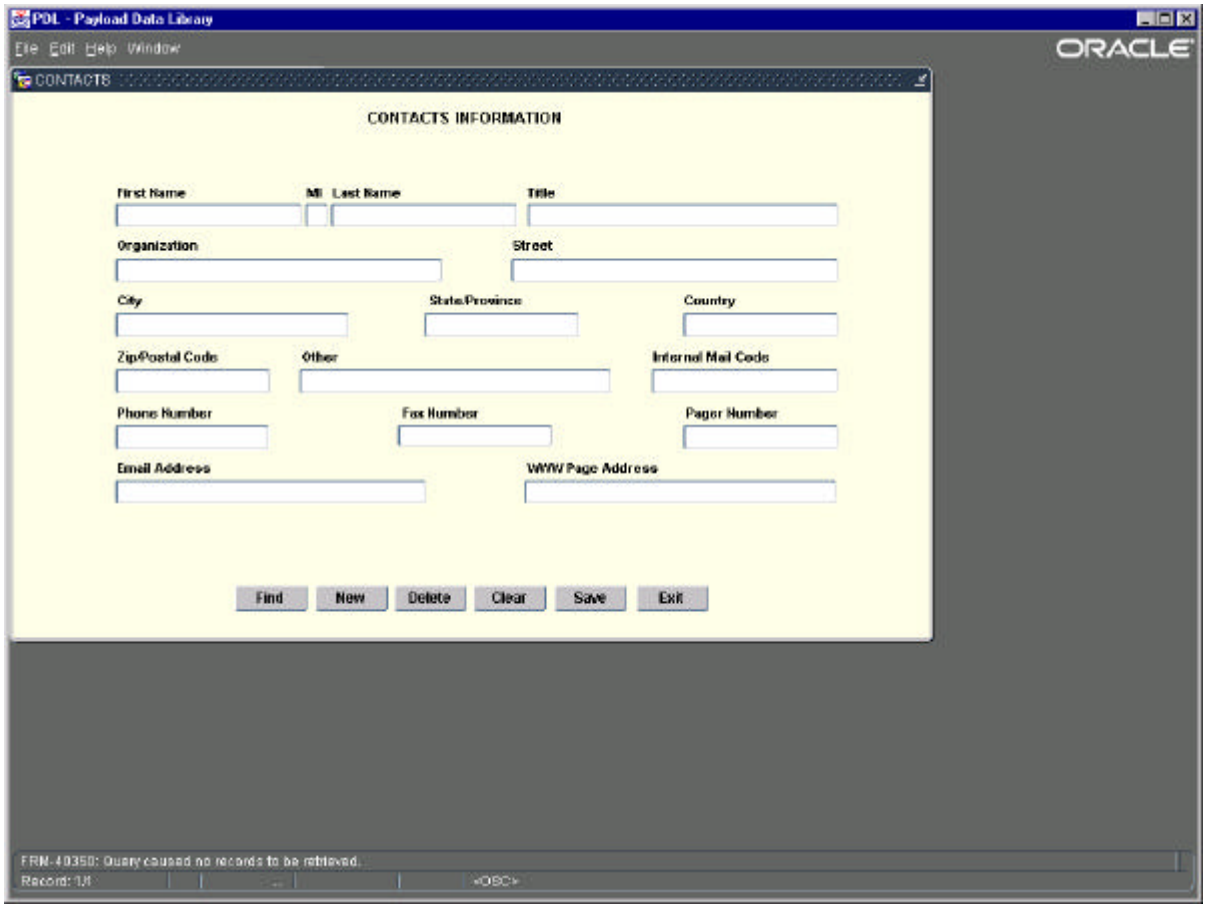

FIGURE 3-9 CONTACTS INFORMATION SCREEN

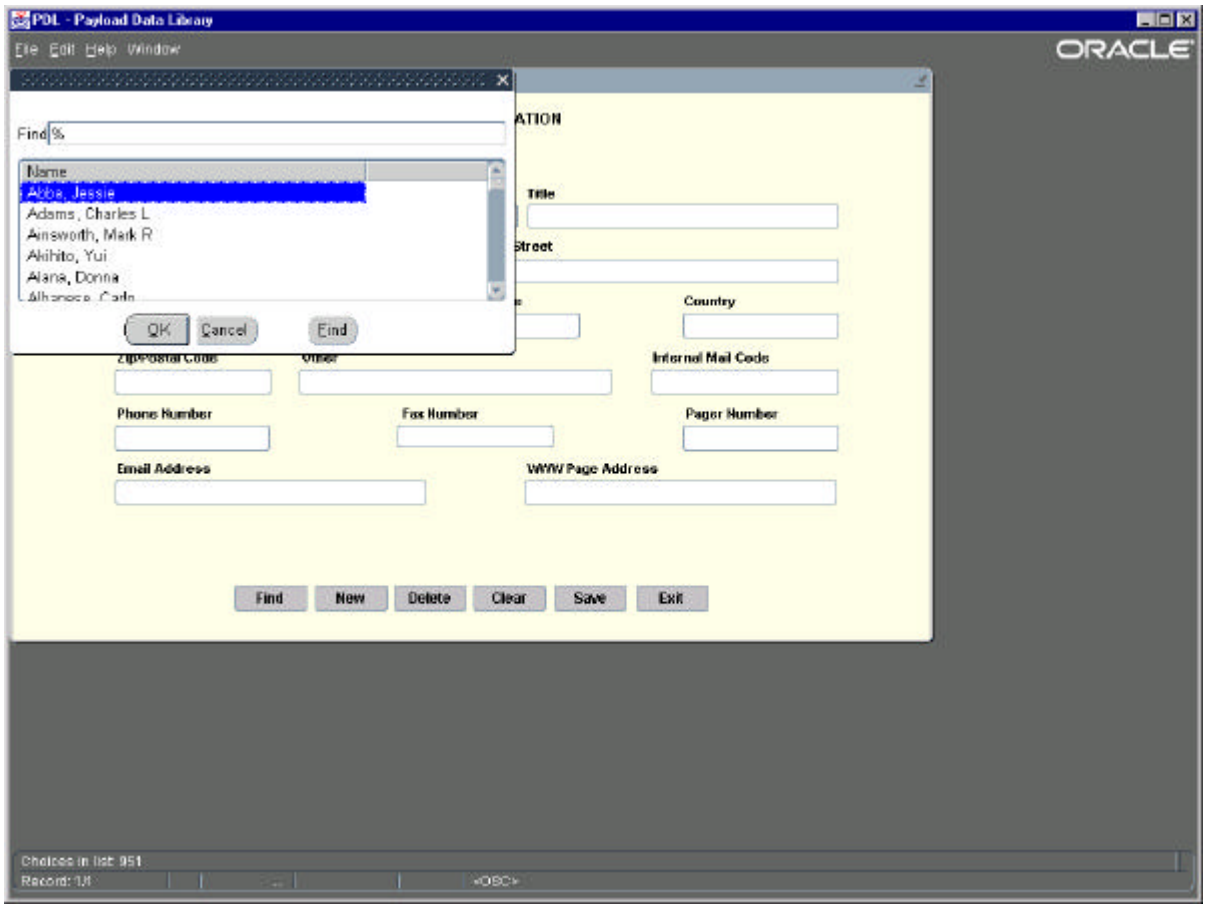

FIGURE 3-10 ADDRESS BOOK POP-UP

3.4.1.3 Rebuild Tree

The *Rebuild Tree* menu selection item will rebuild the Navigation Treeand update any information pertaining to the dataset(s). Refer to Section 3.5 below for discussions on the Navigation Tree.

3.4.1.4 Reports

Reports may be generated in two ways within the PDL. First, the user may select *Reports* from the *File* menu (*Note: If a Form is active, dismiss the Form in order to see the Reports menu selection item*). The Report Selection screen will appear as shown in Figure 3-11. This method is generally used for generation of summarized reports. Select the *Payload*, *Dataset*, and the specific *Report* to be generated. Select the appropriate *Increment*,

Payload Operation Performance (*POP*), *Flight, Sub-element, Sort (1st, 2nd, 3rd), Course, Timeframe,* and *Location,* if applicable. The final selection is the *Destination* of the report. The user may select one of the following: Previewer, ASCII Text (.txt), or MS WORD (.rtf). The Previewer destination will immediately open the Adobe Acrobat Reader application and display the report. The user may print or save the report to their local machine. The ASCII Text destination will save the report in ASCII format and store the report in *My ASCII Report* accessible under the *File* Menu (see Section 3.4.1.6 for more details). Finally, the MS WORD destination will save the report in RTF format and store the report in *My RTF Report* accessible via the *File* Menu (see Section 3.4.1.5 for more details). Both the ASCII and RTF destinations will display a dialog box as shown in Figure 3-12 indicating the name of the report and the hyperlink where it can be found. After the selections are complete, click the *Run Report* button to generate the report. Use the *Exit* button to return to the previous screen.

The second report generation method is detailed in Section 3.4.1.9.

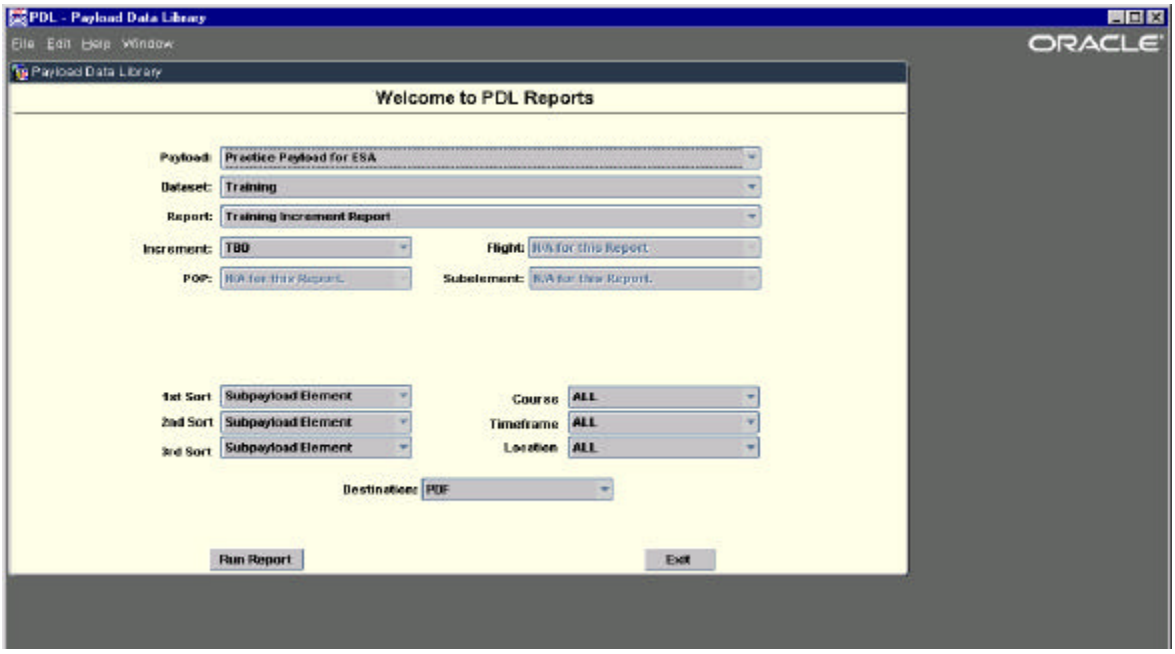

FIGURE 3-11 REPORT SELECTION SCREEN

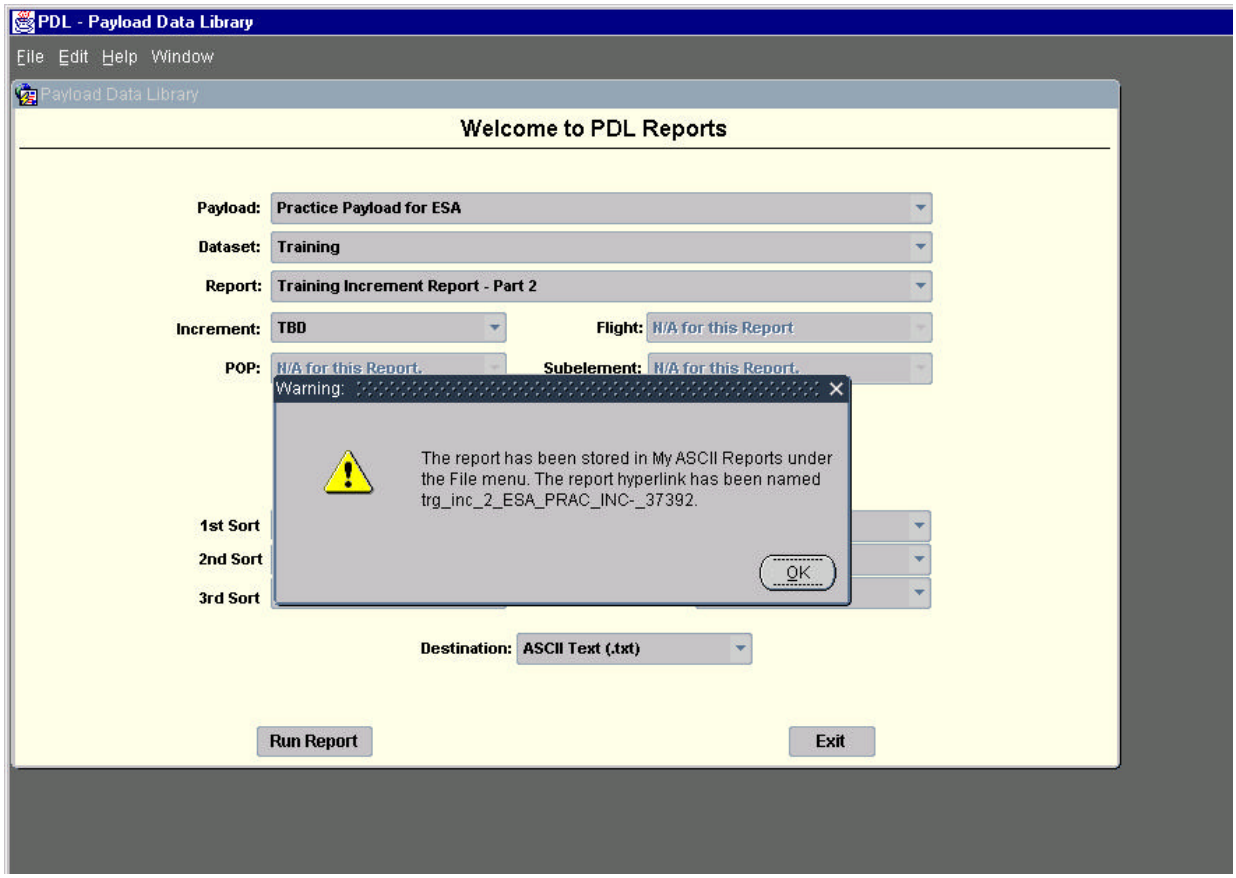

FIGURE 3-12 REPORT DIALOG BOX

3.4.1.5 My RTF Reports

The *My RTF Reports* menu item allows the user to access their RTF formatted reports generated through the *Reports* option described in Section 3.4.1.4 above. These reports can be downloaded from the webserver to the user's computer for easy access by clicking on the appropriate file name as shown in Figure 3-13.

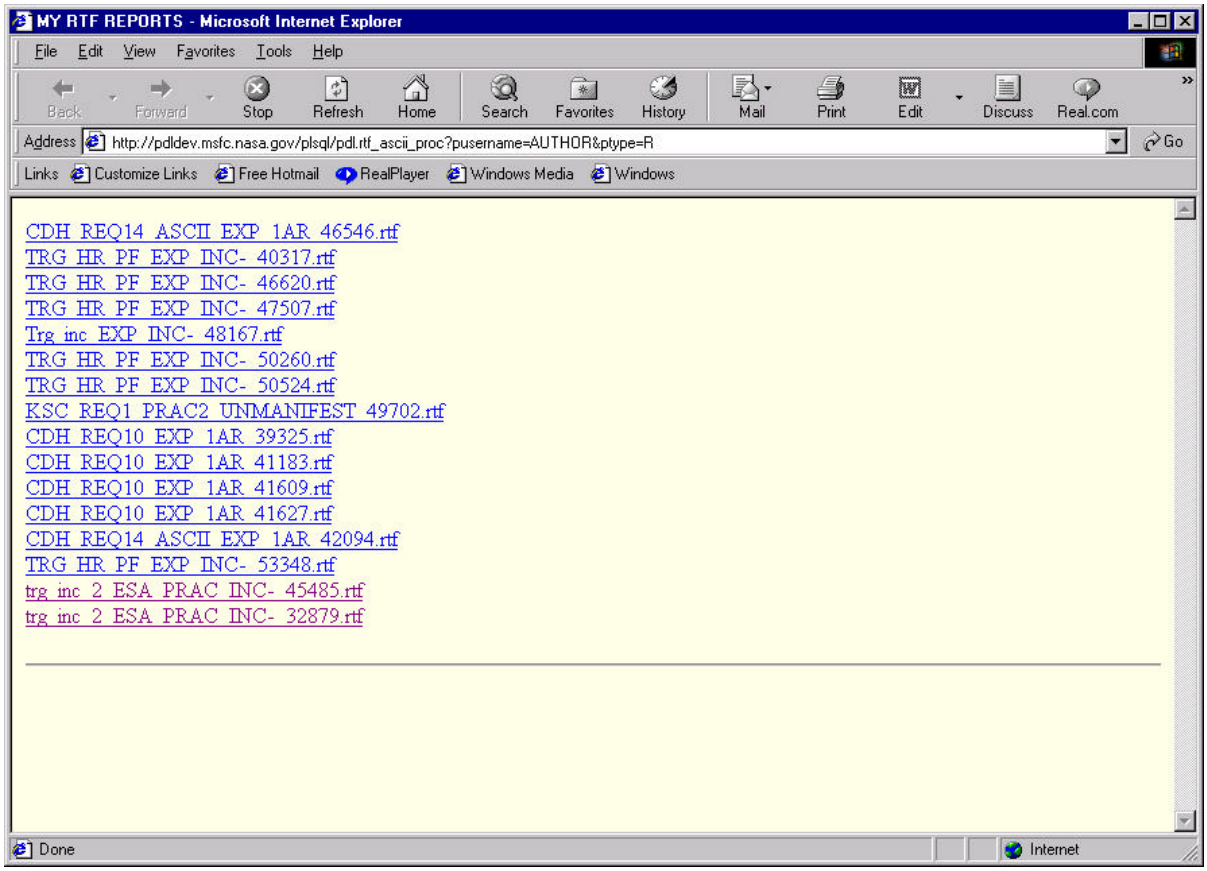

FIGURE 3-13 REPORT FILES

3.4.1.6 My ASCII Reports

The *My ASCII Reports* menu item allows the user to access their ACSII formatted reports generated via the *Reports* option described in Section 3.4.1.4 above. These reports can be downloaded from the webserver to the user's computer for easy access by clicking on the appropriate file name similar to the format shown in Figure 3-13 but with a .txt extension.

3.4.1.7 Address Book

The Address Book is discussed in Section 3.4.1.2 above and is displayed in Figure 3-10.

3.4.1.8 Promote/Demote

The *Promote/Demote* menu item is a critical component in the PDL process. It is used to electronically exchange payload and integration data between the PDs, integrators, data set, and configuration management teams, therefore prior to promoting or demoting, verify that all forms have been filled in and the data in all forms is accurate.

There are three major data control levels in this process: Private, Integrated, and Baselined. Within the integrated level, there are four sub-levels. These sub-levels are submitted, preliminary, final, and draft. These levels are used by the integration engineers and data set managers during the review process to document the maturity of the data.

The PD can promote private data to the integrated-submitted level. Once this activity has taken place, the PD can only review it but will not be able to change it. Authorized personnel at the integration level have the ability to both promote and demote data to all sub-levels of the integrated level and demote back to the private level. The Configuration Manager (CM) can promote integrated-draft data to the baseline level. Once the data has been baselined, it can no longer be promoted or demoted.

To access the Promote/Demote screen shown in Figure 3-14, select the *Promote/Demote* from the *File* menu of the PDL Main Menu.

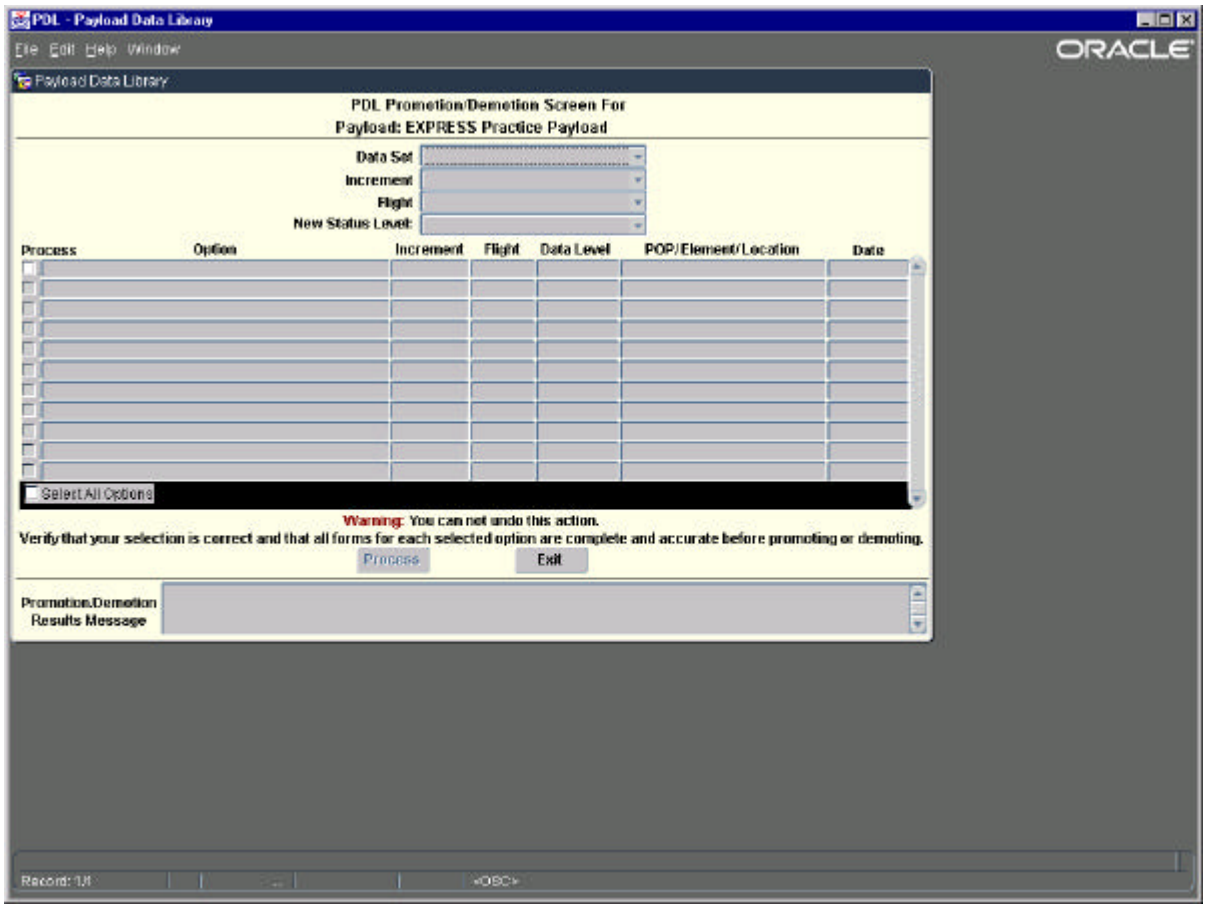

FIGURE 3-14 PROMOTE/DEMOTE SCREEN

The top of the screen displays the name of the specific payload whose data is being promoted/demoted. To change the payload, use the *Exit* button to return to the PDL Main Menu screen. Select *File* then the *Payload Criteria* menu item and the Payload Selection Screen as shown in Figure 3-4 will appear. You then can select another payload from the payload selection pop-list and re-select *Promote/Demote* from the *File* menu. Once the correct payload has been chosen, select a specific D*ataset*, *Increment*, and F*light* from the appropriate pop-lists on the Promote/Demote Screen. Note: If the option being promoted/demoted is not increment or flight-specific these selections do not have to be made. As a result of the selections, option titles are displayed. Click in the*Process* check box to the left of the option title(s) to select the options to be promoted/demoted. Select the *New Status Level* and click the *Process* button. This process may take a few minutes. When the process is finished, the data resides at the selected level and a list of the options that were processed is displayed in the message box.

3.4.1.9 Print

From any form within the PDL the user may select *Print* under the *File* menu to generate a report for that particular form if one exists or default to a screen capture/print of the form and populated data.

3.4.1.10 Quit

The *Quit* menu selection item exits the PDL web application.

3.4.2 Edit Menu Selections

The *Edit* menu selections allow the user to perform functions such as C*ut, Copy, Paste* and *Edit* as shown in Figure 3-15 when manipulatingthe fields on the form.

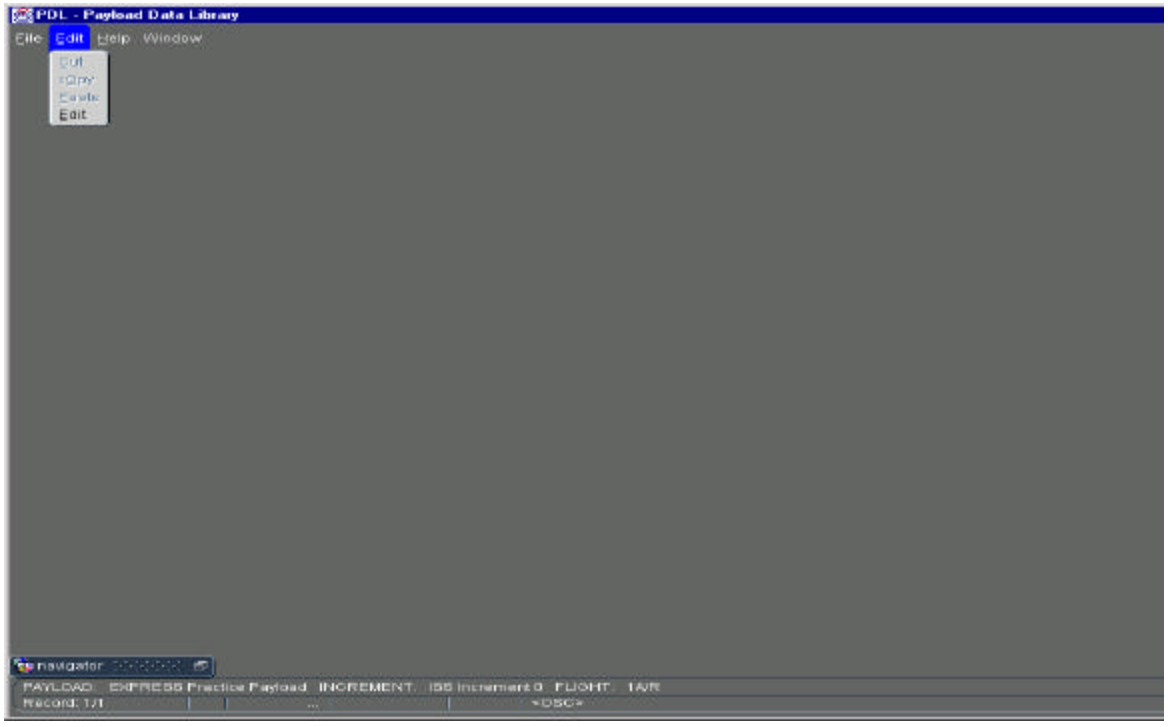

FIGURE 3-15 EDIT MENU SELECTIONS

3.4.2.1 Cut

The *Cut* menu selection item removes selected information (selected by highlighting with the left mouse button) and places it into memory (Clipboard)for future use.

3.4.2.2 Copy

The *Copy* menu selection item copies (but does not remove) selected information and places it into memory (Clipboard).

3.4.2.3 Paste

The *Paste* menu selection item inserts the Clipboard contents at the cursor position.

3.4.2.4 Edit

Selecting the *Edit* menu selection item while in a text enterable fieldwill activate a text editor as shown in Figure 3-16 that will allow the user to insert into and/or modify the text field.

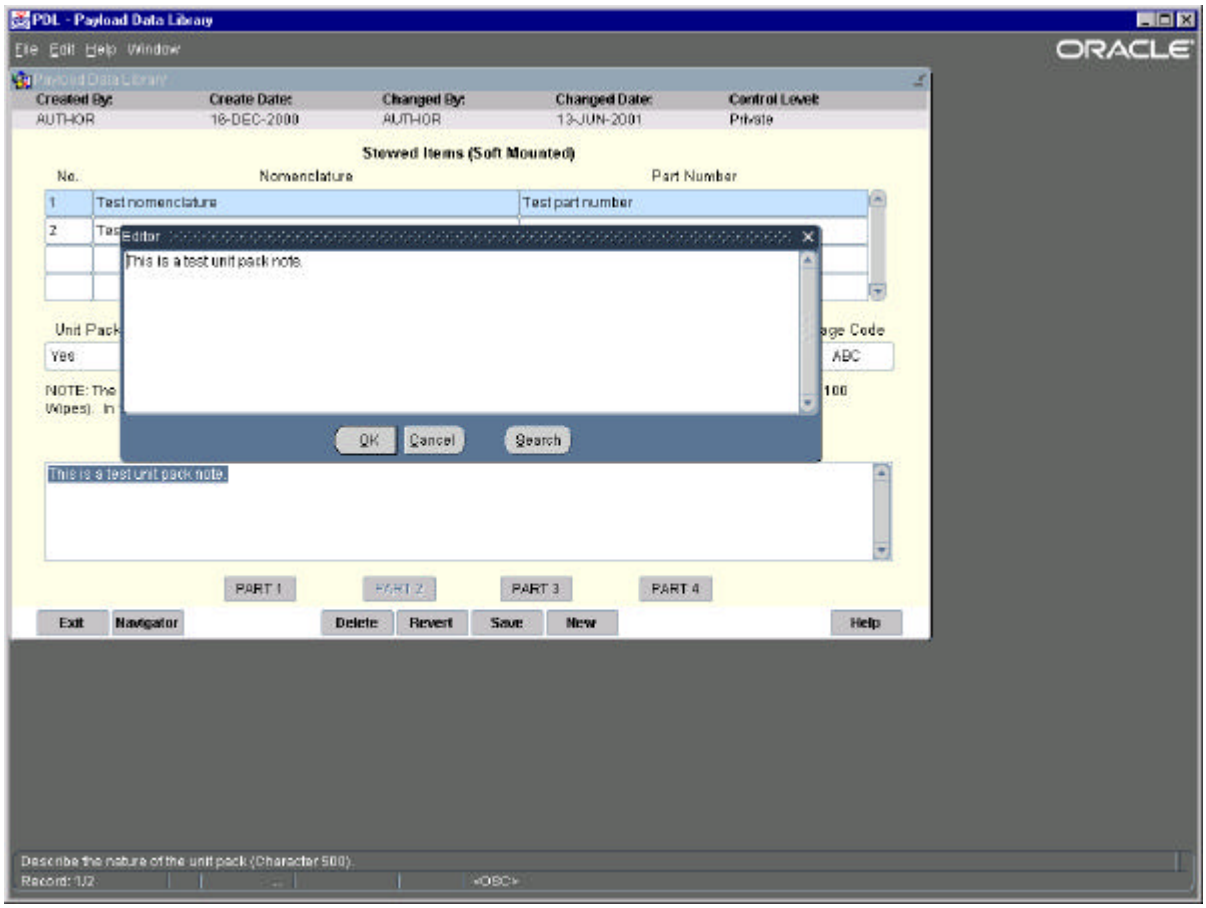

FIGURE 3-16 TEXT EDITOR

3.4.3 Help Menu Selections

In addition to the Help button on the lower right corner of a form screen as you will see discussed later in this document, the *Help* menu allows you to access help information, as shown in Figure 3-17. The selectable items under the *Help* menu include *General*, *On Forms*, *News*, *Problem Reports*, and *Blank Book*. These are discussed in more detail in the following sub-sections.

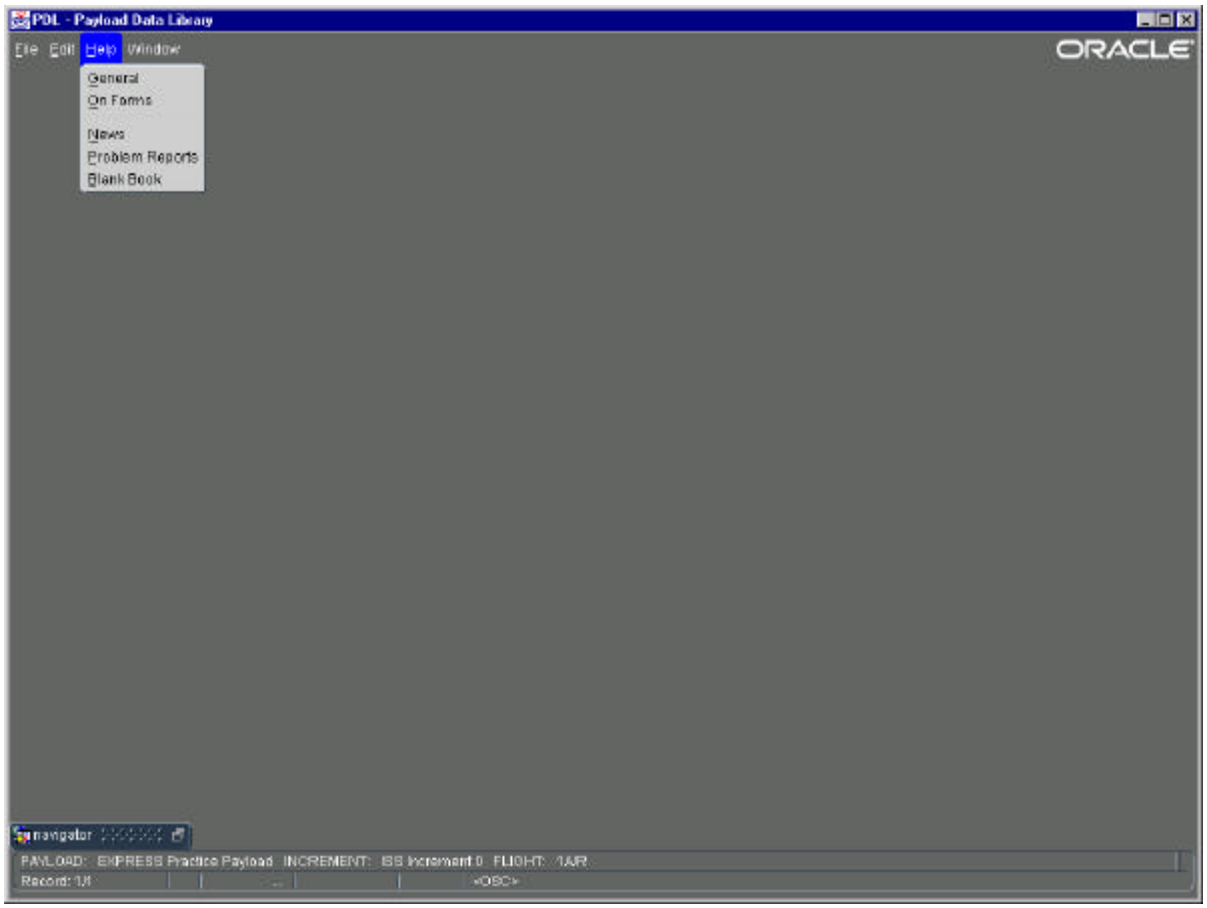

FIGURE 3-17 HELP MENU SELECTIONS

3.4.3.1 General

To access general help, select *General* from the *Help* menu. Enter a keyword in the text box and click the *Find* button. A list of matching items displays in the first scroll box. Items in the list contain the keyword in the title or in the help text. Select an item from this box and the associated option title, form title, field title, and help text will be displayed (See Figure 3-18). Click *Exit* when finished.

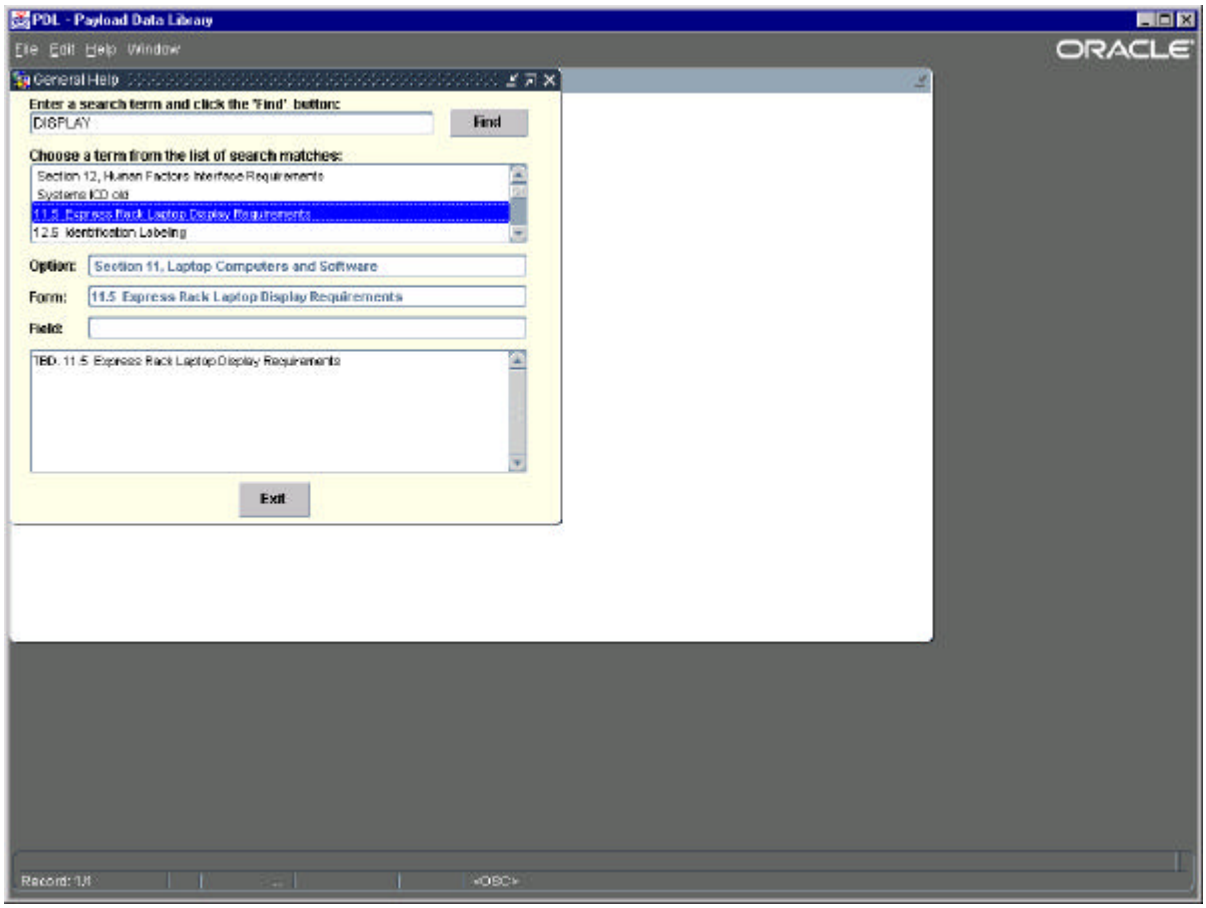

FIGURE 3-18 VIEWING GENERAL HELP

3.4.3.2 On Forms

To access form-specific help, select *On Forms* from the *Help* menu. All PDL options are displayed. Note: This is not data set specific. Selecting an option displays help for that option and a list of forms for the selected option (see Figure 3-19).

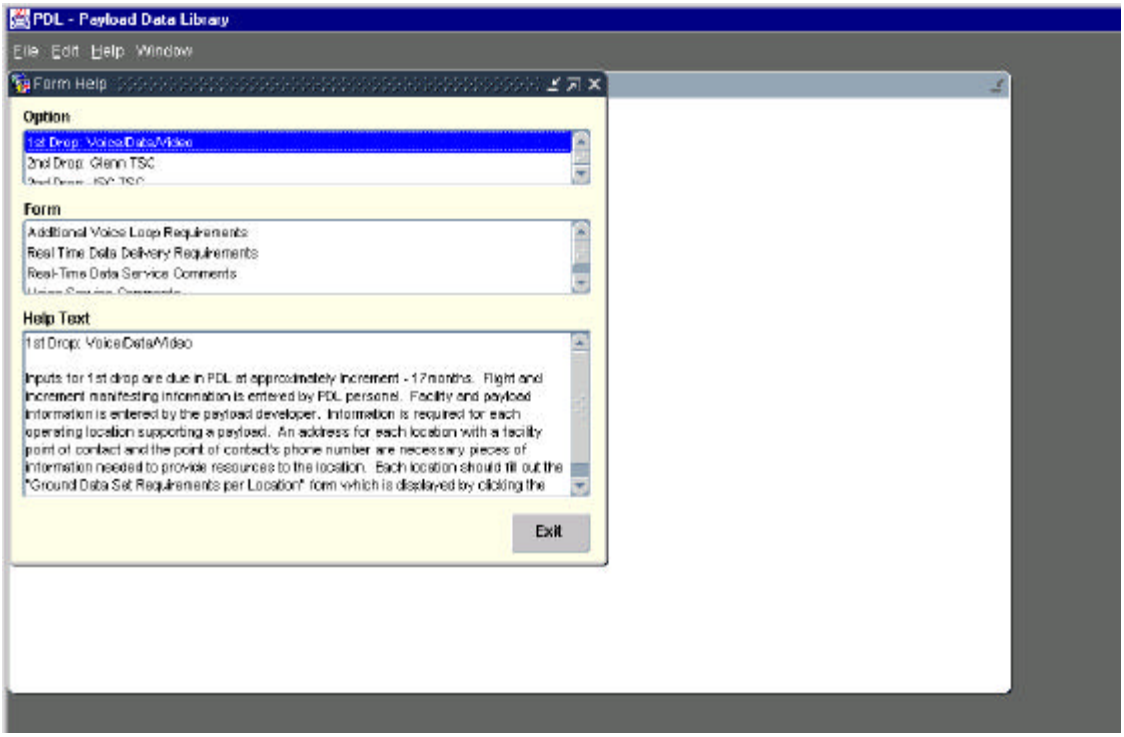

FIGURE 3-19 VIEWING OPTION-SPECIFIC HELP

If the user selects a form, the Option Help is replaced by Form Help. See Figure 3-20. Click *Exit* when finished.

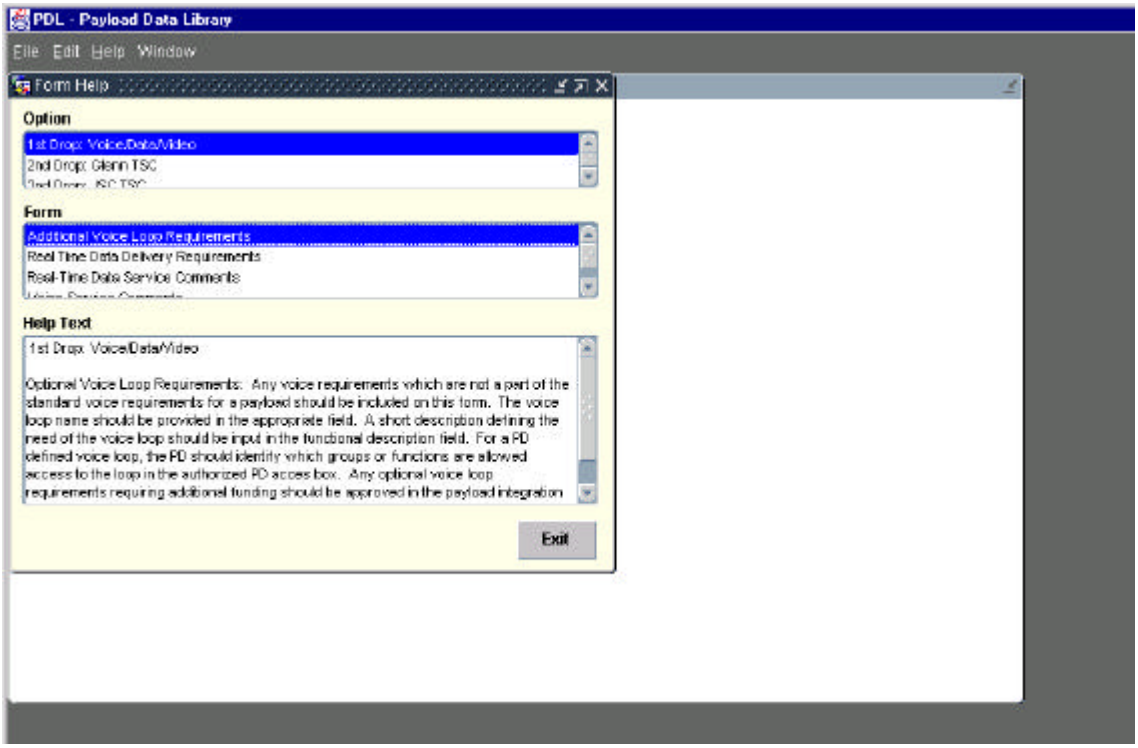

FIGURE 3-20 VIEWING FORM-SPECIFIC HELP

3.4.3.3 News

PDL News, shown in Figure 3-21, is available by selecting*News* from the *Help* menu. The current PDL version number is displayed as well as informative messages from the PDL development team. Click the*Exit* button to close the News window.

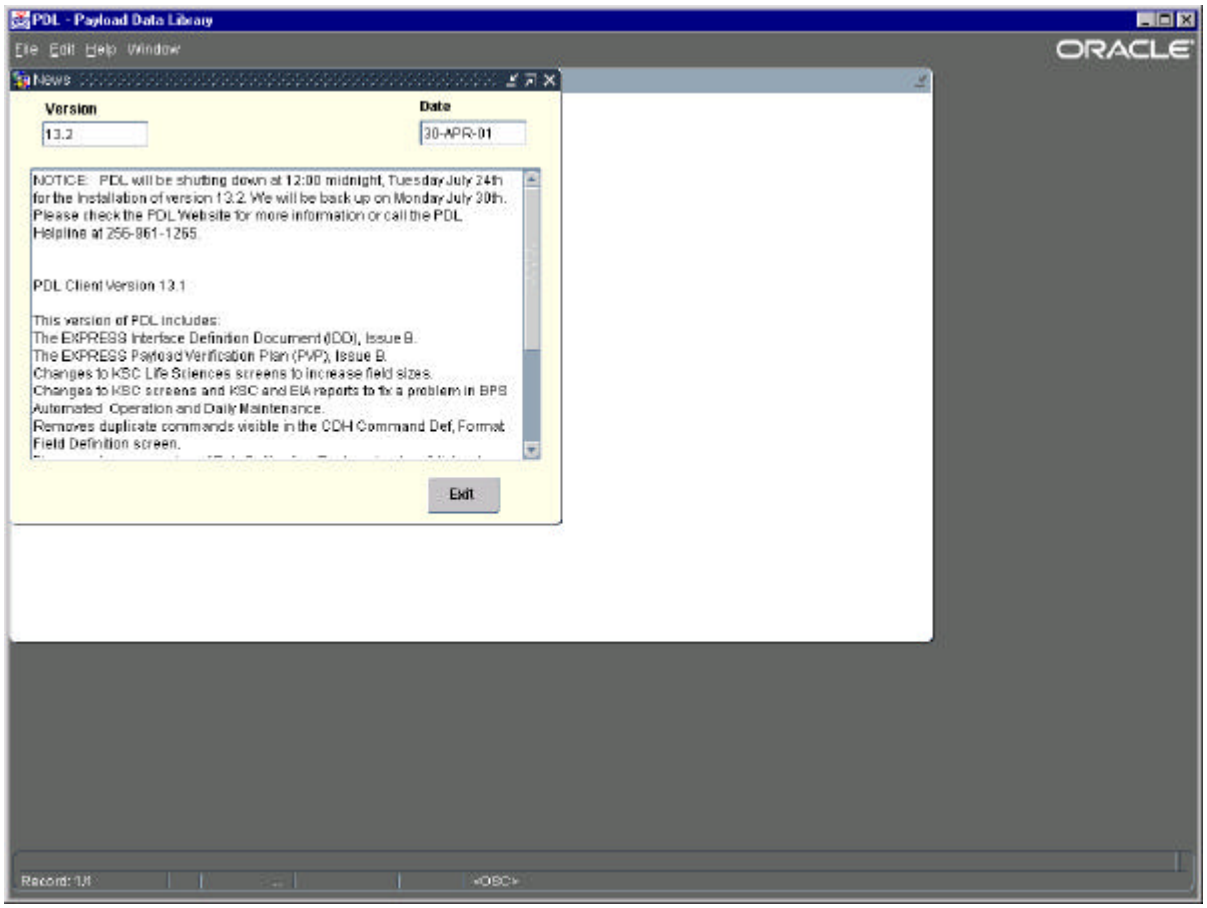

FIGURE 3-21 VIEWING PDL NEWS

3.4.3.4 Problem Reports

To send comments to the PDL Team, choose *Problem Reports* from the *Help* menu (see Figure 3-22). Your username, current date, current version number, computer platform, current discipline title, current option title, current section title, and the next comment number autofills. Type a message, comment, question, or problem in the description of problem field (this is the only field that the user can update). Click the *Save* button to send the comment to the PDL team. The *First* and *Last* buttons will move the pointer to the first and last records in the list respectively. The *Previous* and *Next* buttons will move the pointer one record backward or forward from the current record. Clicking the *Revert* button will revert the data to the last saved version. The *New* button will allow the user the ability to add new problem reports into the system. *Exit* button returns to the previous screen. Use the comment number to check the status of the PDL response to your comment.

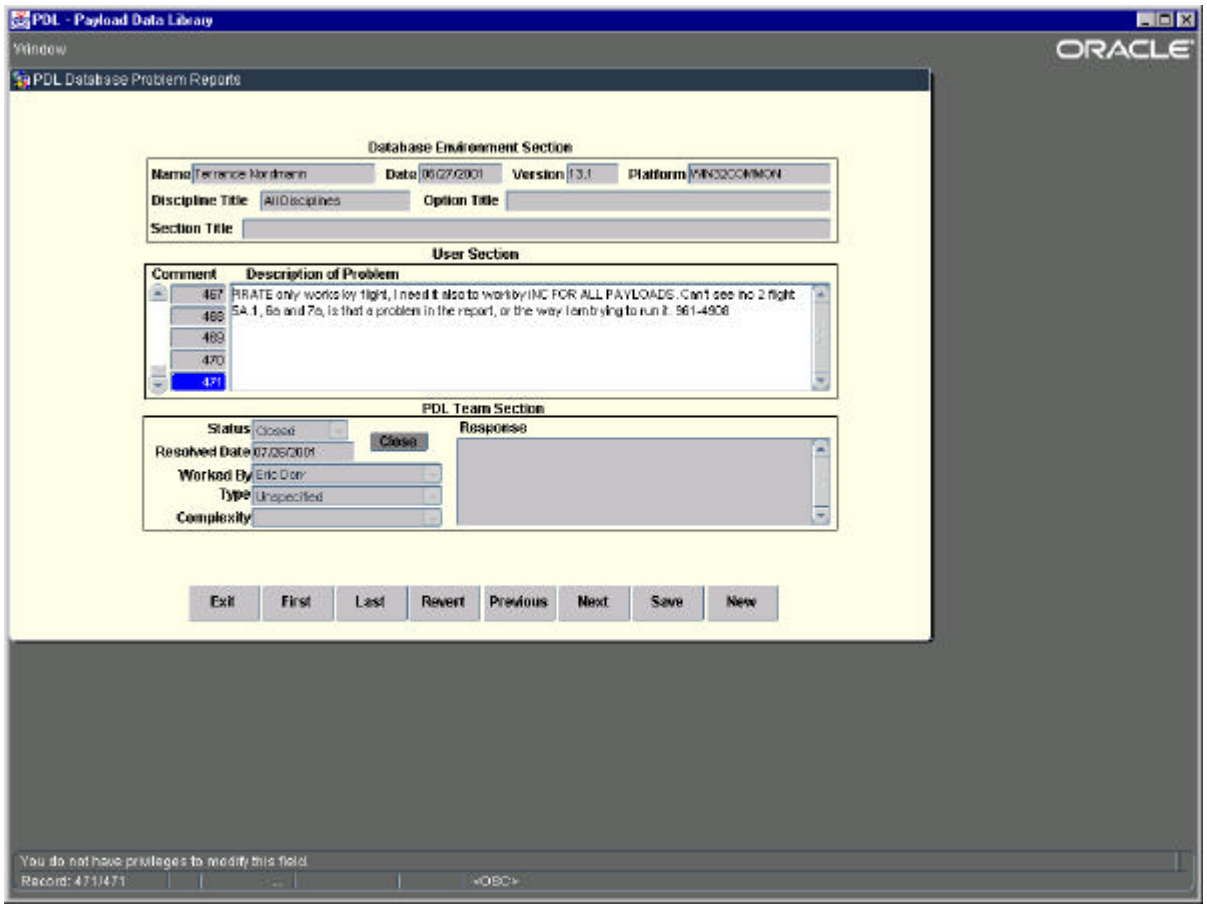

FIGURE 3-22 PROBLEM REPORTS SCREEN

3.4.3.5 Blank Book

The applicable dataset section of the Blank Book can be viewed by selecting *Blank Book* from the *Help* menu when on that dataset in the Navigation Tree (see Figure 3-23). Adobe Acrobat Reader will launch a PDF formatted version of the document. The Blank Books can also be viewed by clicking on the folder icon for a dataset via the Navigation Tree (see Figure 3-25).

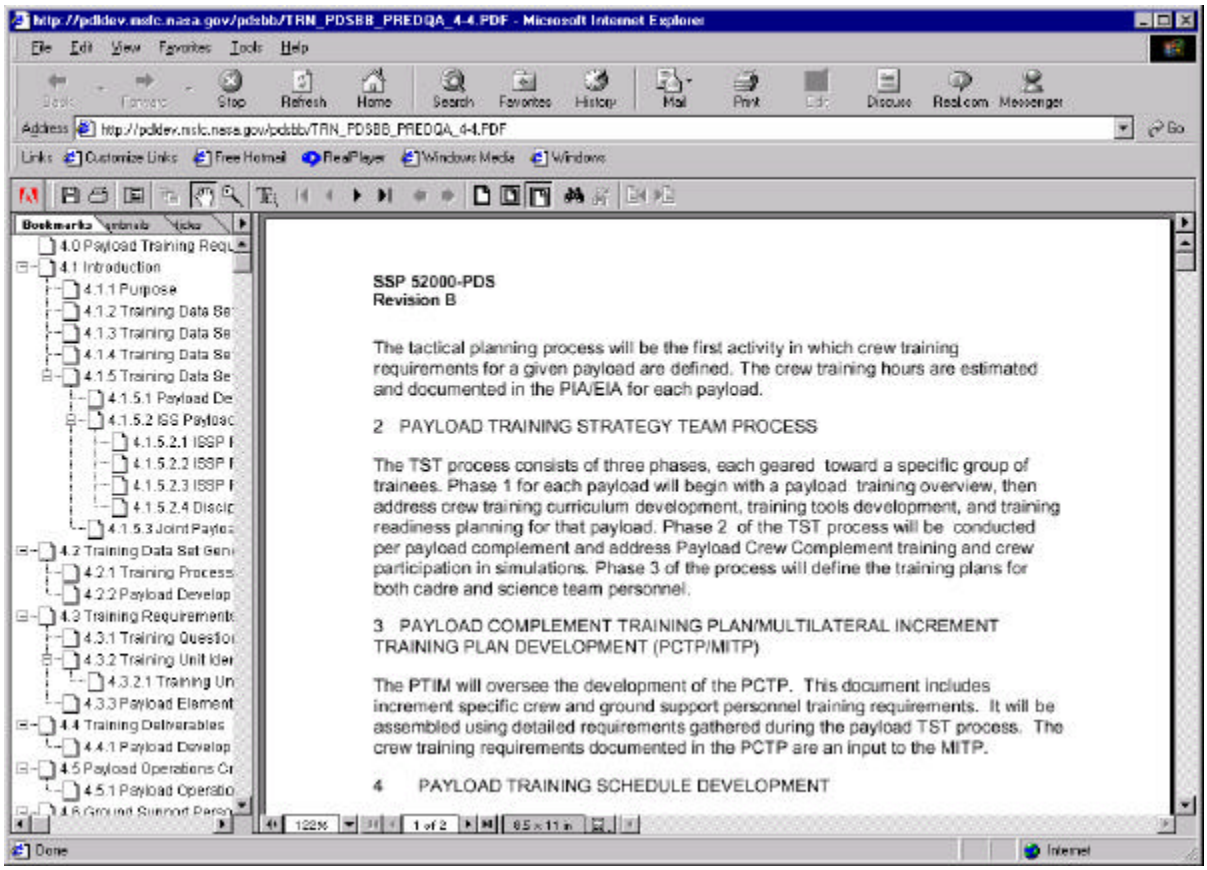

FIGURE 3-23 VIEWING THE BLANK BOOKS

3.4.4 Window Menu Selections

The *Window* menu allows the user the ability to view more than one screen at the same time when working with multiple screens by positioning the widows displayed as *Cascade*, *Tile Vertically*, or *Tile Horizontally*. It also displays the name of the active screens as shown in Figure 3-24.

3.4.4.1 Cascade

The *Cascade* menu selection item allows the user to stack the windows one over another.

3.4.4.2 Tile Horizontally

The Tile Horizontally menu selection item allows the user to stretch each window the full width of the screen and stacks them one on top of the other.

3.4.4.3 Tile Vertically

The *Tile Vertically* menu selection item stretches the windows vertically and arranges them side-by-side across the screen.

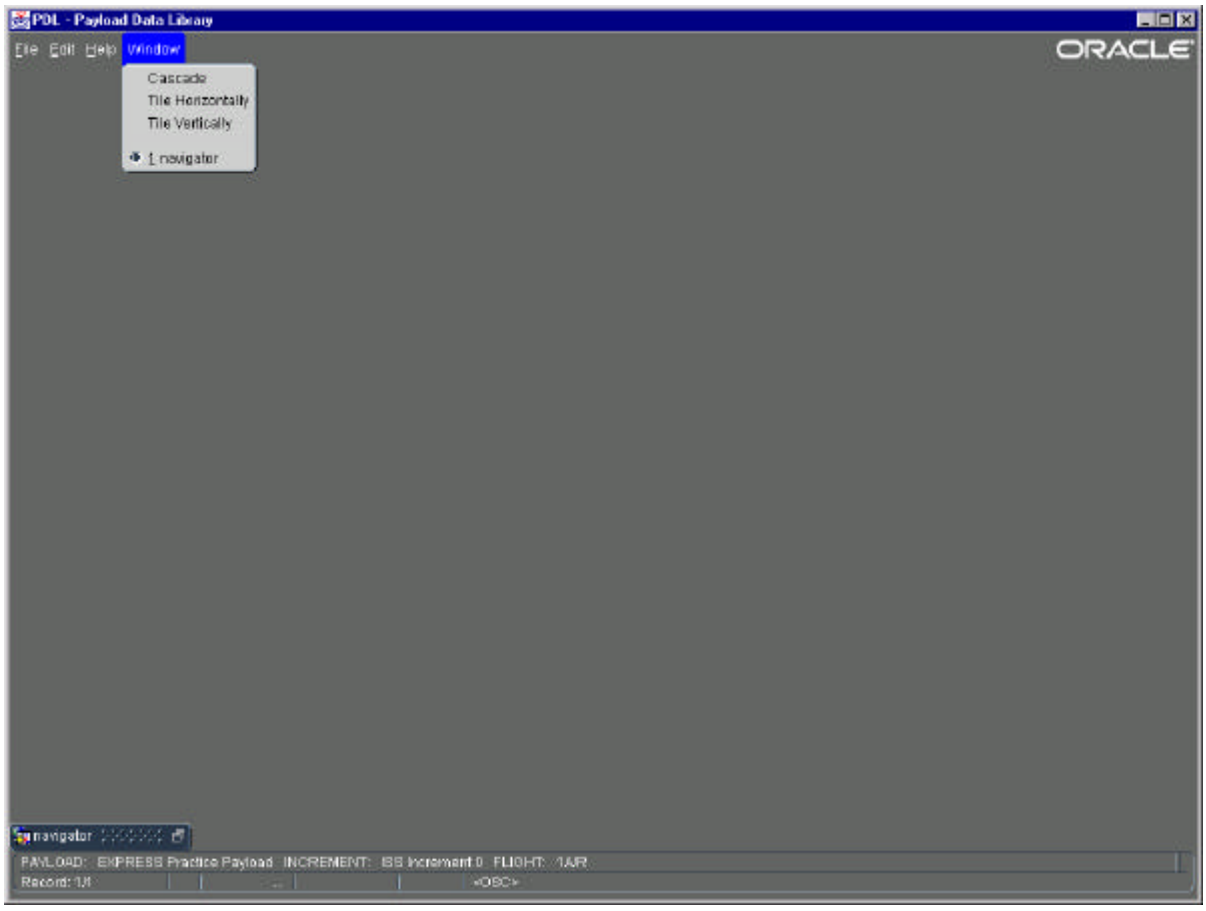

FIGURE 3-24 WINDOW MENU SELECTIONS

3.5 UNDERSTANDING THE NAVIGATION TREE AND ICONS

Figure 3-25 shows the icons that are used in the Navigation Tree and their meanings.

Icon	Characteristics	Definition
Dataset Level Icons		
	Closed and Opened Yellow Folder	Dataset
	Red Triangle	Under Construction
Option Level Icons		
	Closed and Opened Blue Folder w/ P	Option at Private Level
	Closed and Opened Green Folder w/ C	Option at Controlled (Baselined) Level
	Closed and Opened Orange Folder w/ I	Option at Integrated Level
	Closed and Opened Yellow Folder w/ Question Mark (?)	Option with no Data (additional data required and a window will pop up to enter it)
	Yellow Padlock	No Data at that Level to View
Form Level Icons		
	Scroll w/ Orange Pen	Read/Write Capability on Form
	Scroll w/ no Pen	Read Only Capability on Form
	Black Question Mark	No Data (needs additional data at the option level)
	Gray X Box	This form is not applicable to the type of data you are working on

FIGURE 3-25 NAVIGATION TREE ICONS

3.5.1 Navigating Through Data Sets

Upon selecting a payload, the Navigation Tree is built as shown in Figure 3-26. Navigating through datasets in the Navigation Tree can simply be performed by clicking on the appropriate data set with the folder icon as shown in Figure 3-25. The Datasets are as identified in Figure 2-1 (PayloadBreakdown Components).

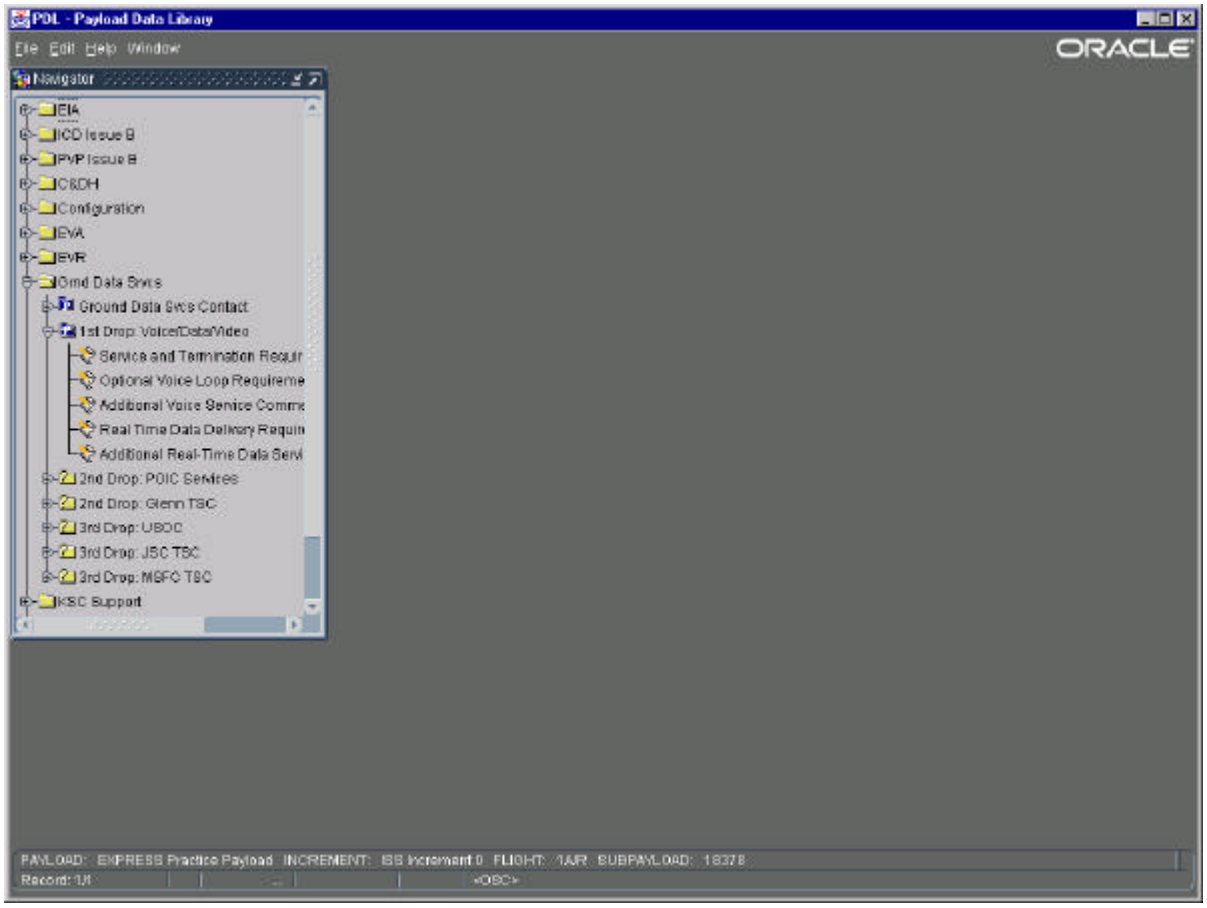

FIGURE 3-26 NAVIGATION TREE

3.5.2 Navigating Through Options

An option is a logical grouping of data entry forms. Navigating through Options in the Navigation Tree can simply be performed byexpanding the Dataset node by clicking on the appropriate folder icons as shown in Figure 3-25 above and then selecting the appropriate

Option from the list. If a question mark appears in the folder icon, as shown in Figure 3-25 above, once selected another window will pop up for the user to supply additional information. The type of windows that will require additional information are for Payload Sub-elements, Payload Operation Performance (POP, etc. The following sub-section describes how to define a payload sub-element.

3.5.2.1 Defining a Payload Sub-element

If there are multiple sub-elements for the selected flight,the screen to select or create a particular sub-element is displayed as shown in Figure 3-27. To define a sub-element, click the *New* button and enter the Payload Sub-element Description and Acronym. When new sub-element(s) have been entered, click the *Save* button. To delete a sub-element, select it and click the *Delete* button. The *Exit* button returns the user to the main screen. Once a sub-element is created it is displayed in the list. Upon selecting the recently created sub-element or an existing sub-element click the *OK* button and the forms are available for selection

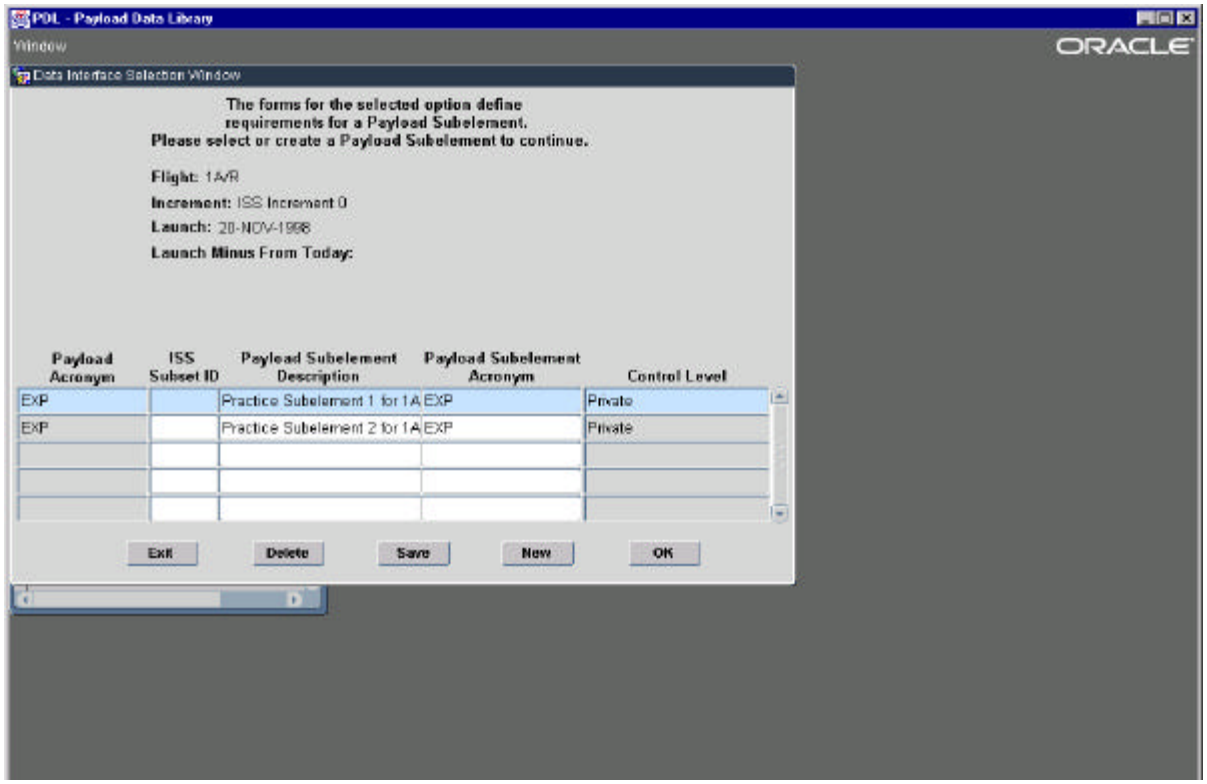

FIGURE 3-27 DEFINING A PAYLOAD SUB-ELEMENT

3.5.3 Navigating Through Forms

Selecting a form in the Navigation Tree can simply be performed by clicking on the appropriate form icon as shown in Figure 3-25 above.

3.6 UNDERSTANDING THE STATUS LINE ON A FORM

The status of the current PDL form is displayed at the top of the form (see Figure 3-28). The status includes the original author and creation date of the current record, the author and date of the latest change, and the configuration control level for the data currently displayed on the form. The name of the form also appears at the top of each form below the status line.

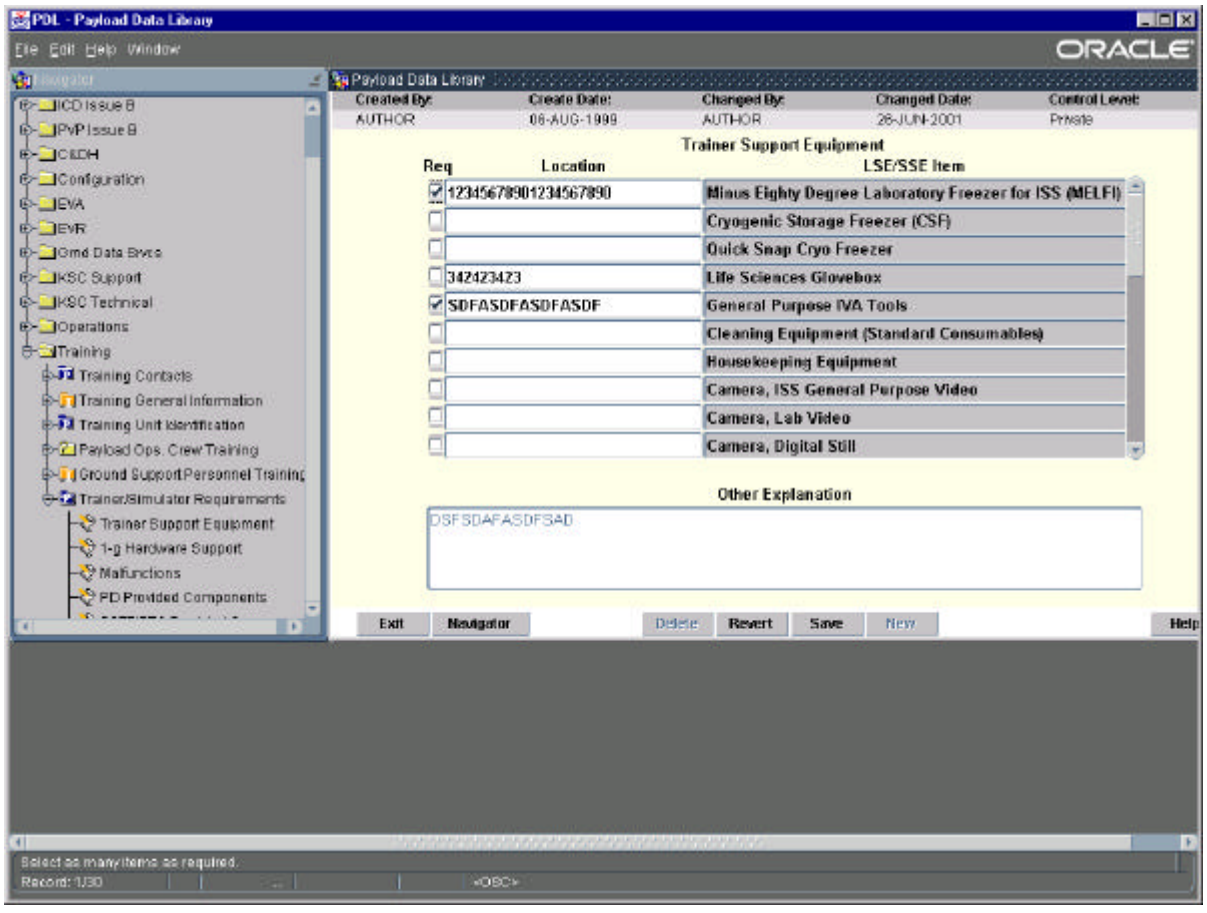

FIGURE 3-28 UNDERSTANDING THE FORM STATUS LINE

3.7 UNDERSTANDING THE LAYOUT BUTTONS

All Form screens have buttons at the bottom of the screen, as shown in Figure 3-28. Each button has its own unique function that is easily executed by a single click. The buttons from left to right are:

EXIT	Exits the form and returns to the Navigation Tree.
NAVIGATOR	Brings the Navigator Tree to the front of the form and allows the user to navigate to the next form in the Forms menu list.
DELETE	Deletes the record shown on screen. This button may be disabled if not applicable.
REVERT	Reverses any changes that have been made to the current form since the last save. This button will be disabled if not applicable.
SAVE	Saves all changes made to the current form. This button will be disabled if not applicable.
NEW	Adds new records for user input to the current form. This button will be disabled if not applicable.
HELP	Invokes item-specific help for items on a form.

In the event a user has a read-only account, only the Exit, Navigator and Help buttons are enabled at the bottom of all Forms screens. The other buttons are not applicable in this case because no write access has been granted.

3.8 ENTERING INFORMATION INTO THE PDL

There are several ways to enter information into PDL. Any constraints on data length or format are displayed in the Hint Line at the bottom of the screen. After entering information, click the *Save* button on the bottom of the screen to save changes.

Enterable fields have a white background. Enter values by placing the cursor in the white entry field and typing the information, shown in Figure 3-29. Read-only information displays in gray non-enterable fields. Select items in a list by clicking in a checkbox as shown in Figure 3-30.

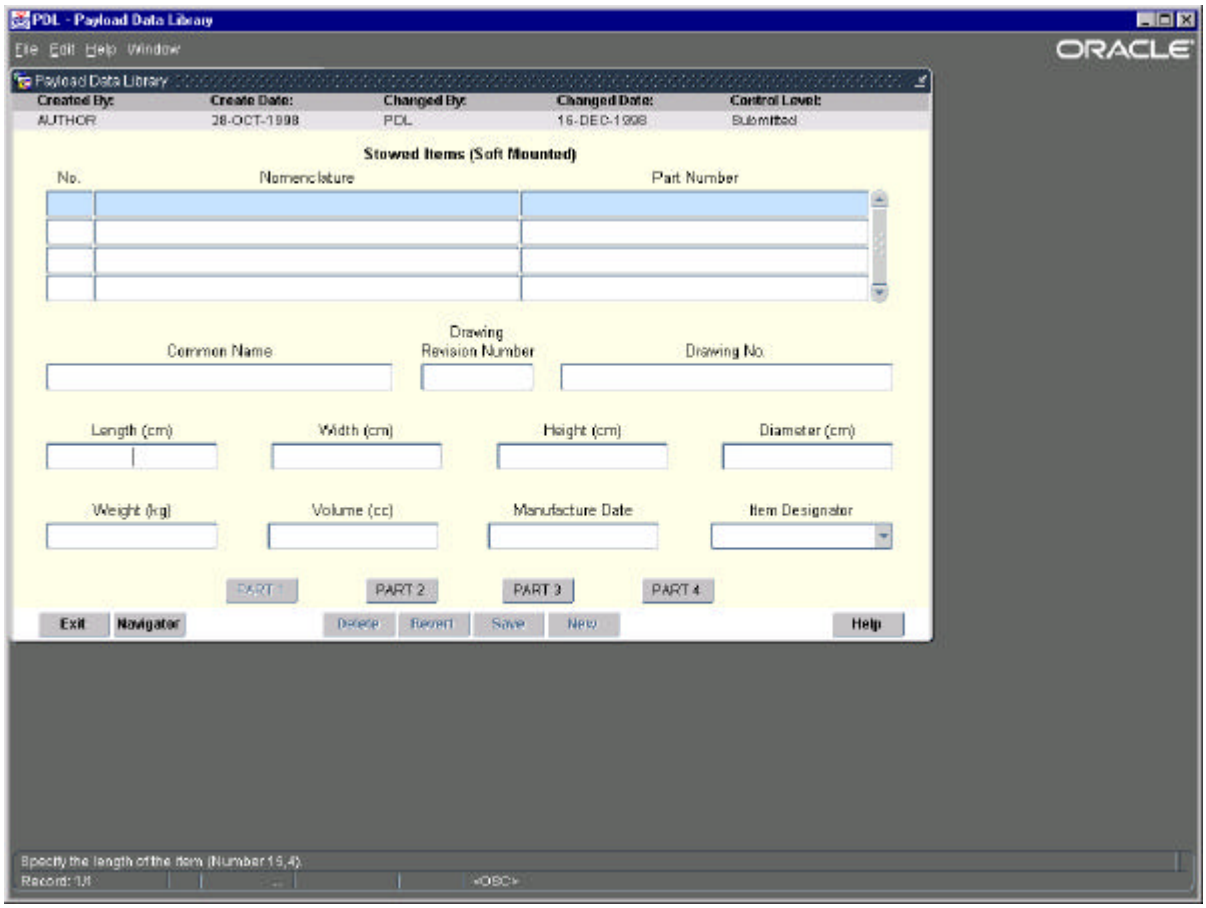

FIGURE 3-29 ENTERING INFORMATION IN ENTERABLE FIELDS

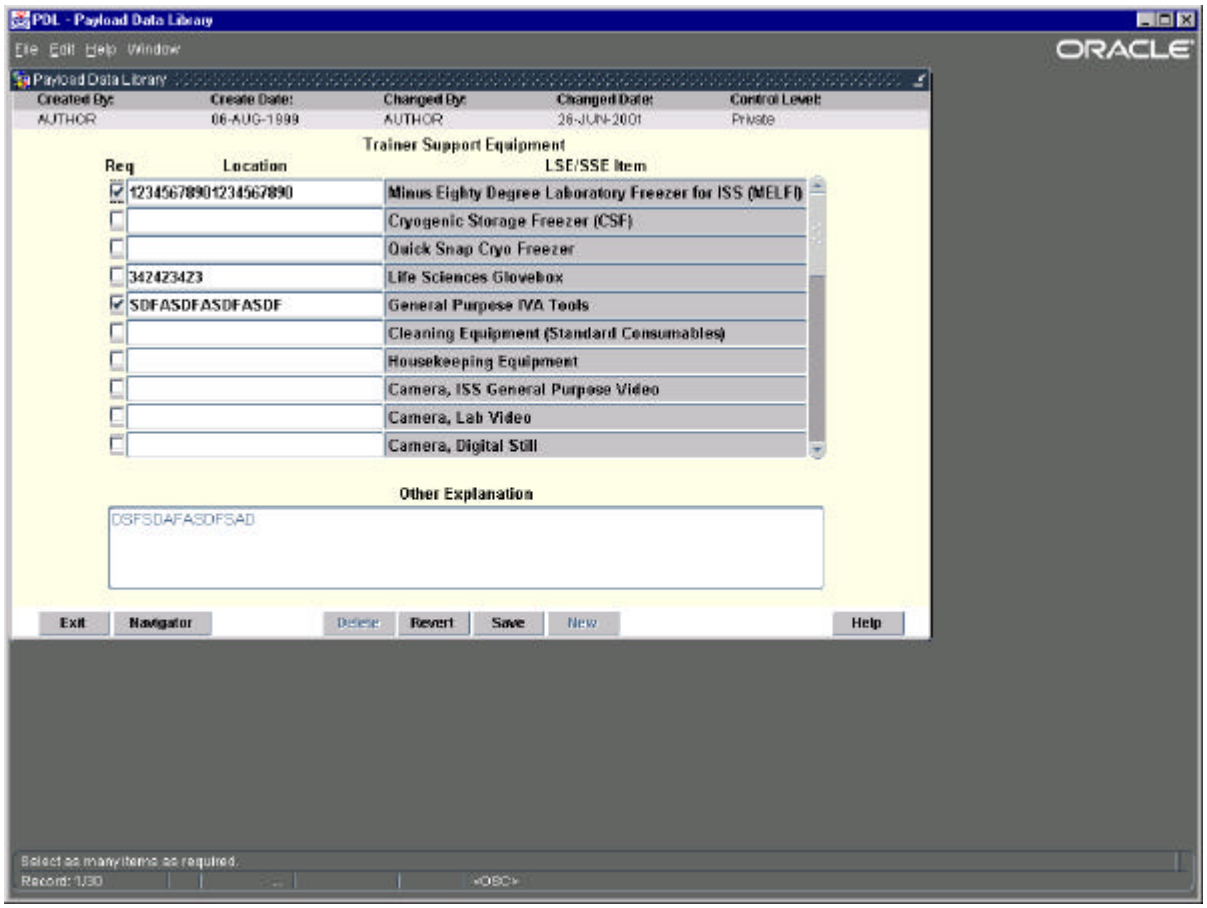

FIGURE 3-30 ENTERING INFORMATION VIA A CHECK BOX

3.9 FIELD-SPECIFIC HELP

To access field-specific help, place the cursor in the appropriate field on the form, then click the *Help* button (see Figure 3-31). The help for the selected field will be displayed. Click *Exit* when finished.

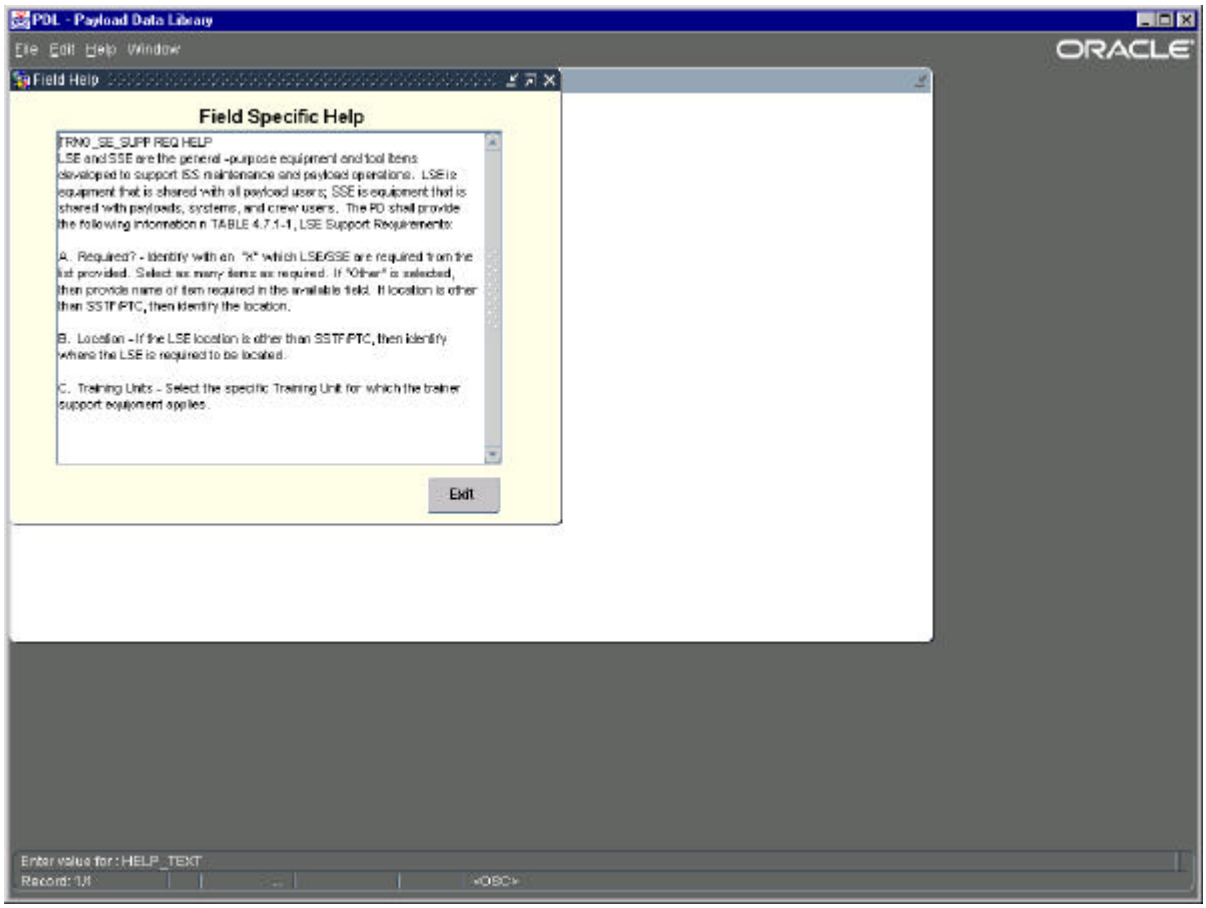

FIGURE 3-31 VIEWING FIELD-SPECIFIC HELP

3.10 IMPORTING/VIEWING GRAPHICS

3.10.1 Pressurized Payloads

PDL provides the capability to import and view graphics for pressurized payloads. Figure 3-32 below shows the screen used for importing and viewing graphics associated with the electrical/power system. Drawings can either be resident or non-resident (also referred to as CAD). If it is a non-resident image you will need to download the file to your computer. The importing and viewing of non-resident and resident image formats are discussed in greater detail in Sections 3.10.1.1 and 3.10.1.2, respectively.

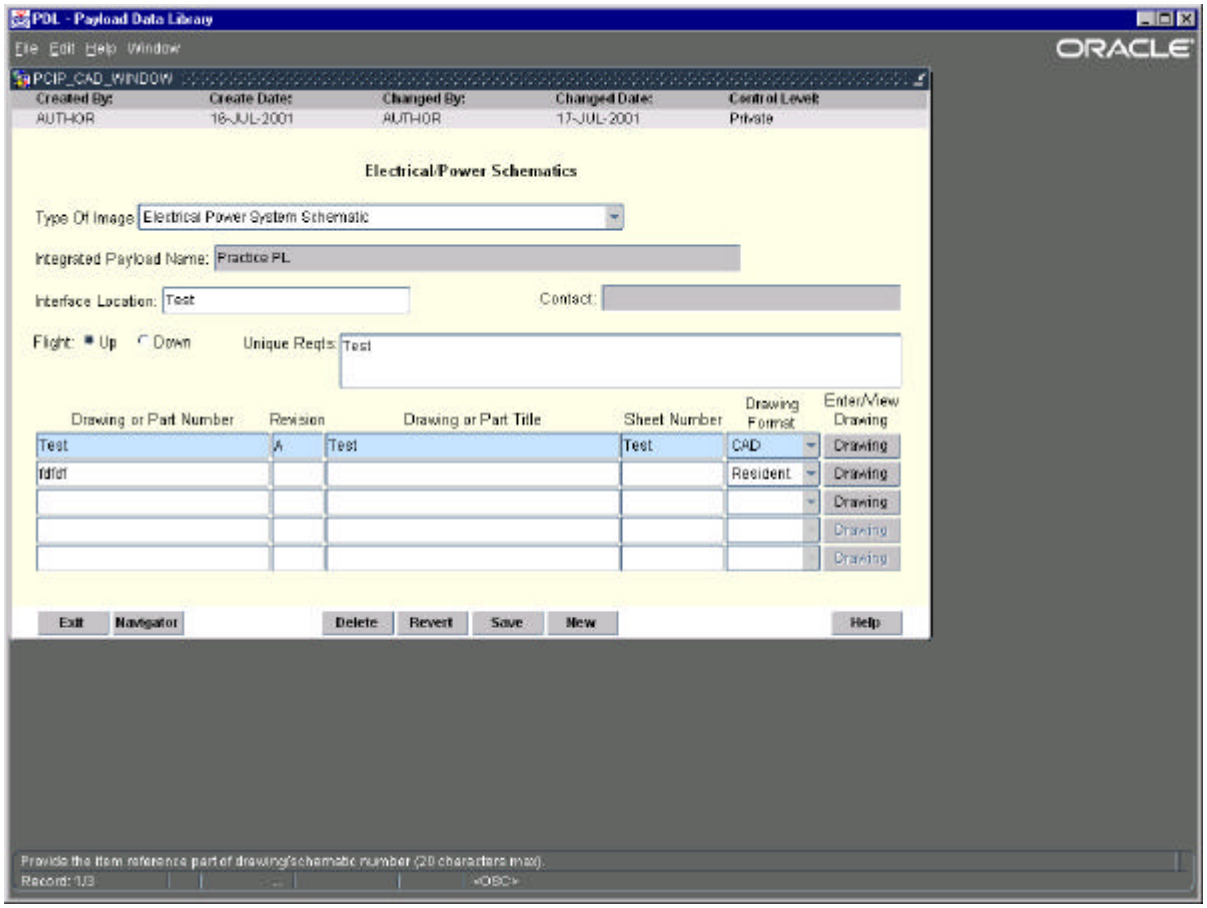

FIGURE 3-32 ELECTRICAL/POWER SYSTEM GRAPHICS SCREEN

3.10.1.1 Importing and Viewing Non-Resident (CAD) Drawings

Figures 3-33 through 3-39 will demonstrate how to import and view a new non-resident drawing (also referred to as CAD) in PDL titled "PDL Sample Drawing1."

To import a new non-resident drawing, select the *New* button; then, proceed by selecting the *Type of Image* from the pull-down menu, provide the *Interface Location* of additional documentation and/or drawings/schematics, indicate if a drawing is for a *Flight Up* or *Down*, and, in the *Unique Reqts* field, specify any special handling or configuration requirements for the payload. Fill in the *Drawing or Part Number, Revision, Drawing or Part Title*, and *Sheet Number* fields. Select the *CAD* format from the pull-down menu as shown in Figure 3-33 below. Then click on the *Drawing* button.

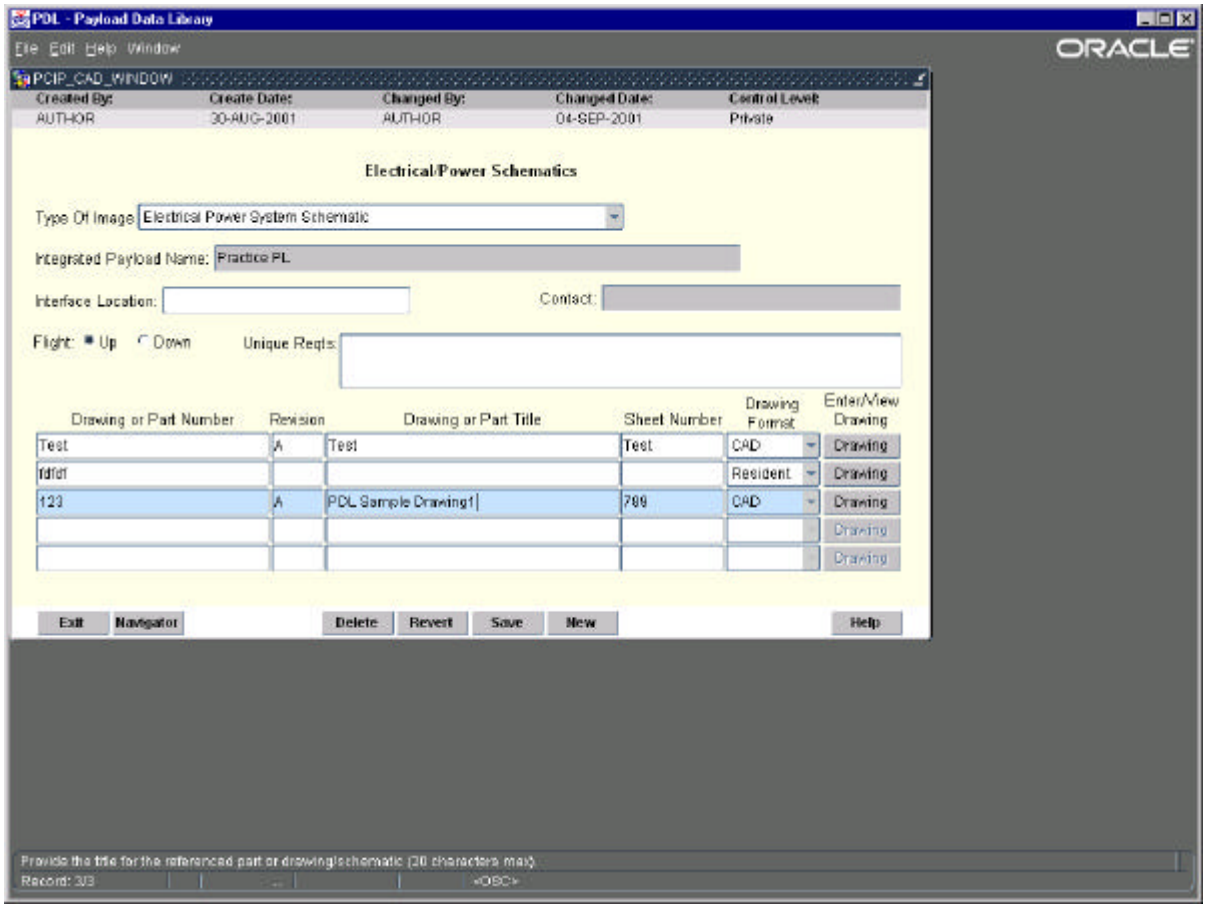

FIGURE 3-33 IMPORTING A NEW NON-RESIDENT DRAWING

Upon clicking the *Drawing* button, the Upload/Download Content Screen will appear as shown in Figure 3-34. To upload a non-resident file, click on the *New* button on this screen.

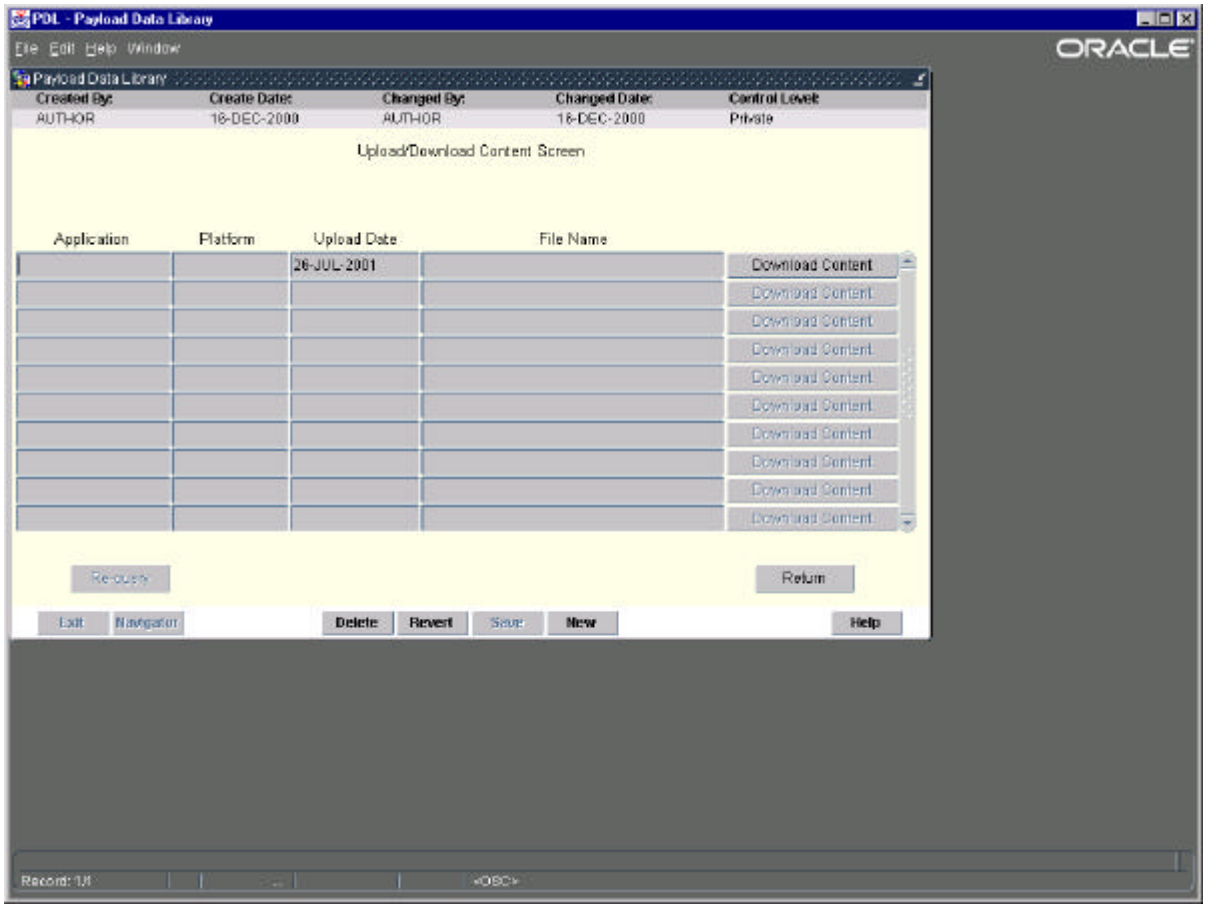

FIGURE 3-34 UPLOAD/DOWNLOAD CONTENT SCREEN

Upon clicking the *New* button, the Non-Resident Image Upload Form shown in Figure 3-35 will appear. Browse or enter the name of the file to upload and then click on *Upload Non-Resident Image* button. A separate window as shown in Figure 3-36 will appear displaying a message indicating the image was uploaded successfully.

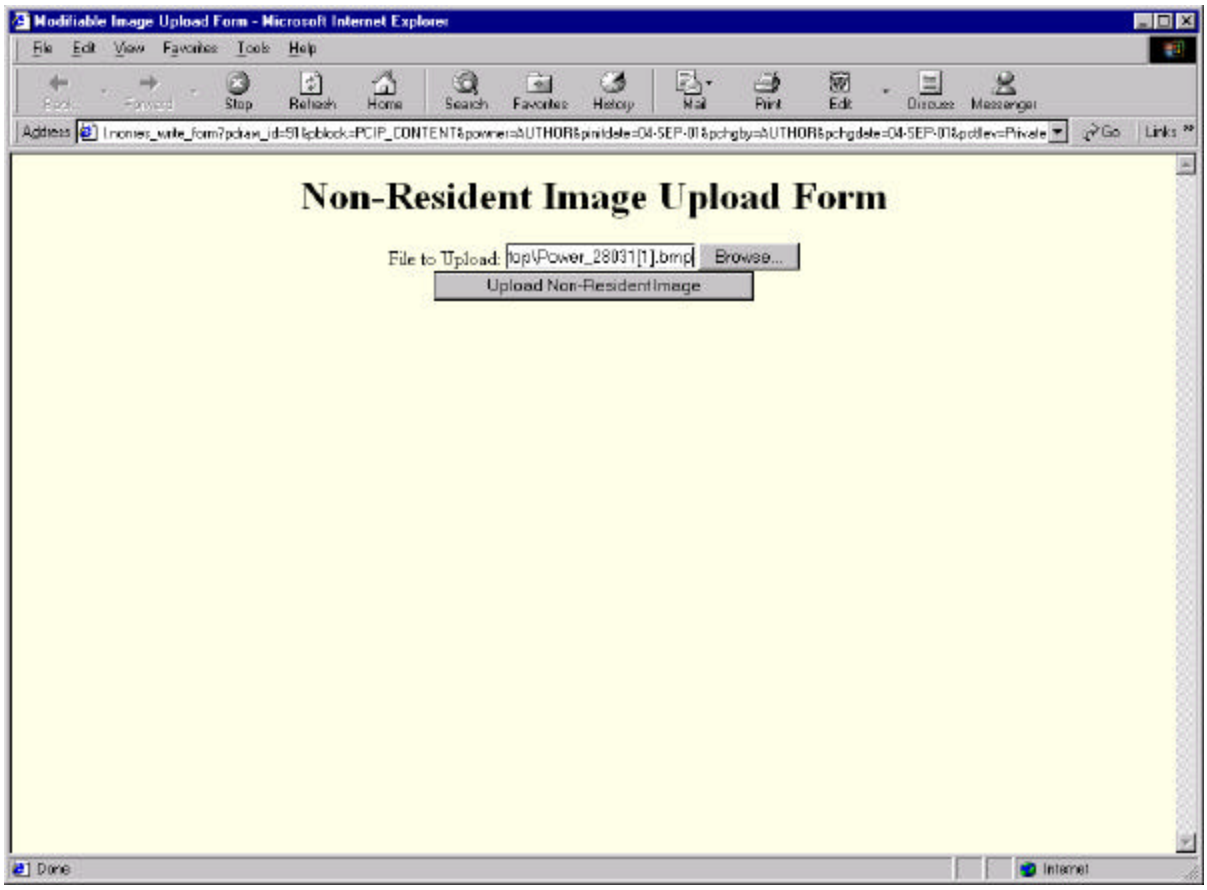

FIGURE 3-35 NON-RESIDENT IMAGE UPLOAD FORM

FIGURE 3-36 IMAGE UPLOADED SUCCESSFULLY WINDOW

Close the Image Uploaded Successfully window to return back to the Upload/Download Content screen. Click on the *Re-query* button to display the new record you have uploaded. The *Application*, *Platform*, *Upload Date*, and F*ile Name* will be automatically populated upon upload as shown in Figure 3-37 below. To view the contents of the file, click on the *Download Content* button.

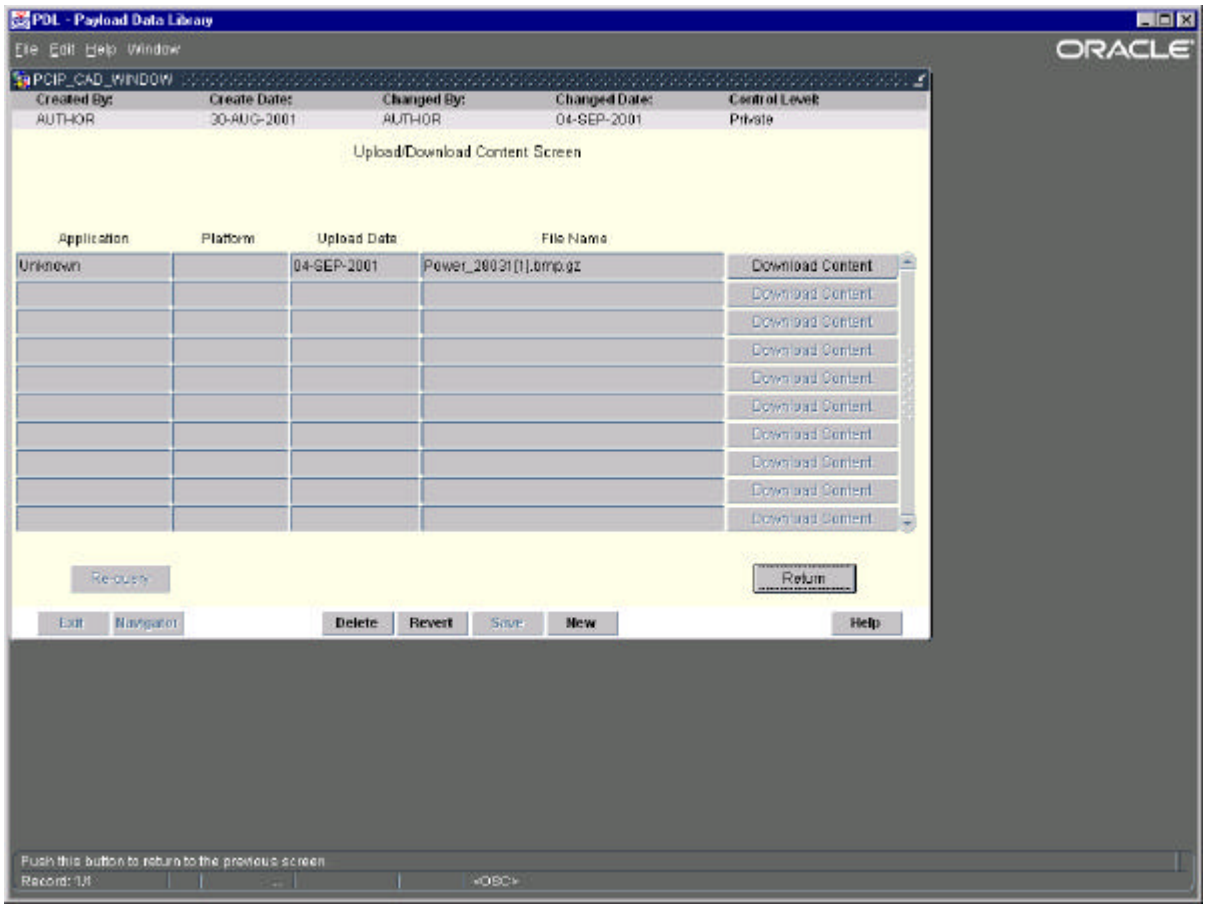

FIGURE 3-37 NEW RECORD DISPLAYED

Upon clicking on the *Download Content* button, the File Download window will appear as shown in Figure 3-38. You can either open this file from its current location or save it to disk. Saving the file to disk is recommended and is done by clicking on the radio button and clicking on the *OK* button. Once the destination for the saved file is provided, another window will appear indicating that the download is complete as shown in Figure 339. To close this window click on the *Close* button. The file is saved in a zipped format at your desired destination and will require a decompression software (i.e., Stuff-It Expander) to open it.

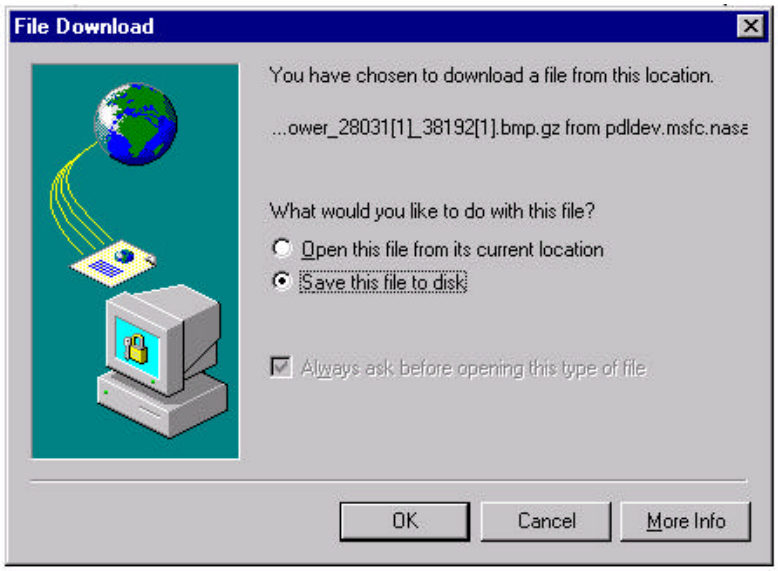

FIGURE 3-38 FILE DOWNLOAD WINDOW

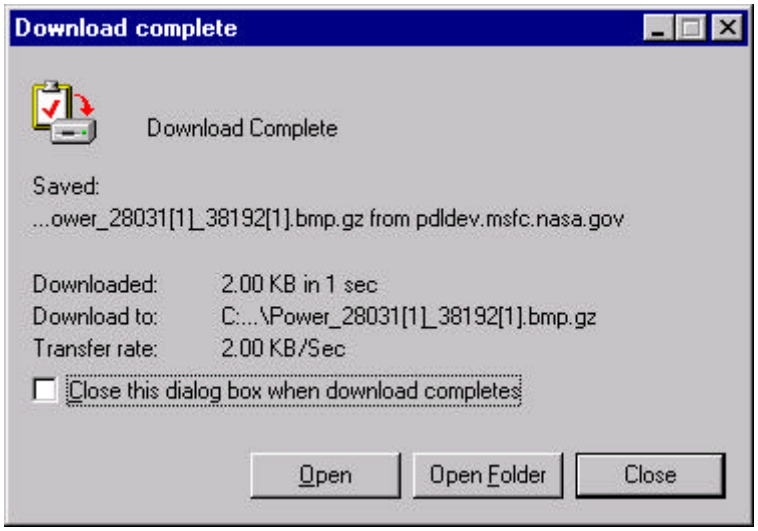

FIGURE 3-39 DOWNLOAD COMPLETE WINDOW

Once you return back to the Upload/Download Content Screen, as shown in Figure 3-37 above, click on the *Save* button in order to save the imported image and its associated data. Click on the *Return* button to go back to the screen in Figure 3-33.

3.10.1.2 Importing and Viewing Resident Drawings

Figures 3-40 through 3-45 will demonstrate how to import and view a new resident drawing in PDL titled “PDL Sample Drawing 2.”

To import a new resident drawing, select the *New* button; then, proceed by selecting the *Type of Image* from the pull-down menu, provide the *Interface Location* of additional documentation and/or drawings/schematics, indicate if a drawing is for a *Flight Up* or *Down*, and, in the *Unique Reqts* field, specify any special handling or configuration requirements for the payload. Fill in the *Drawing or Part Number*, *Revision*, *Drawing or Part Title*, and *Sheet Number* fields. Select the *Resident* format from the pull-down menu as shown in Figure 3-40 below. Then click on the *Drawing* button.

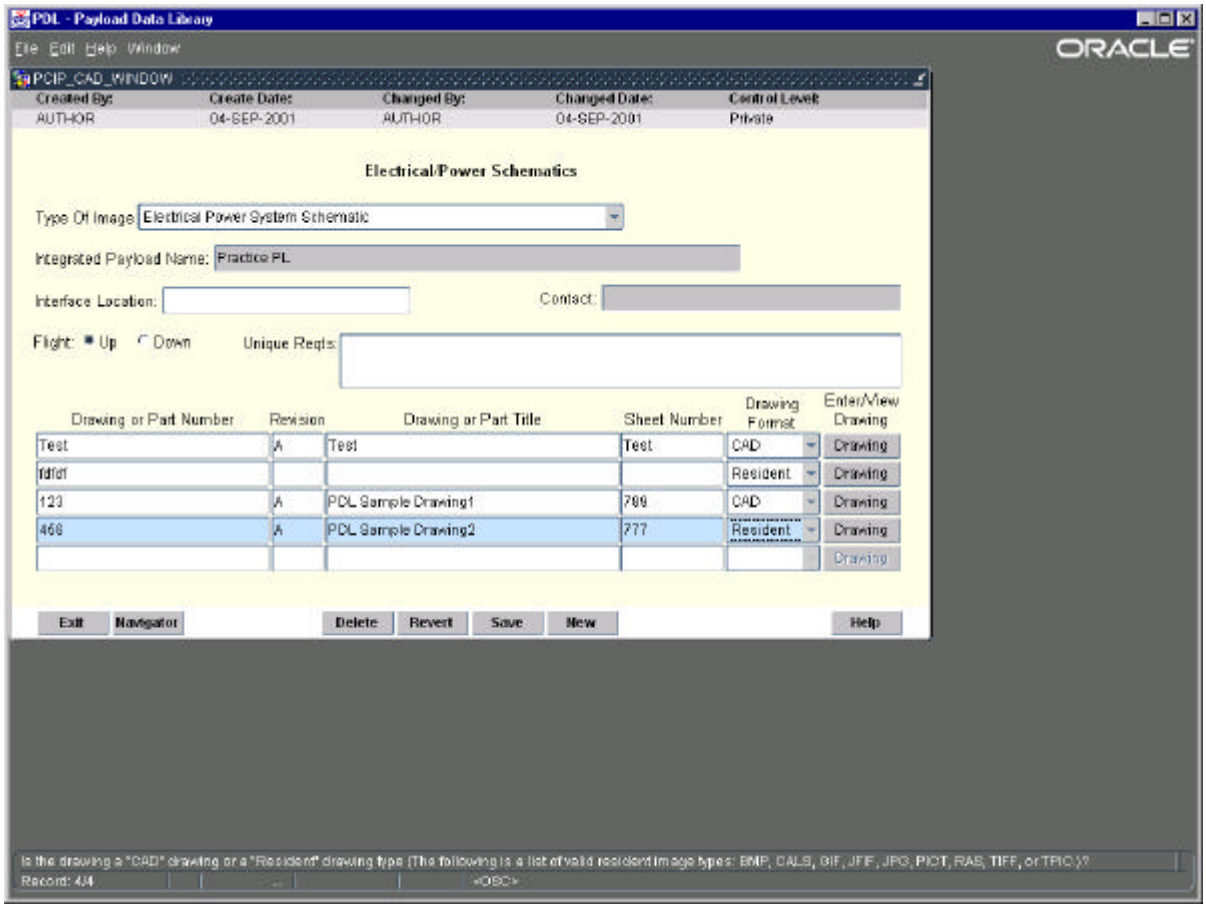

FIGURE 3-40 IMPORTING A NEW RESIDENT DRAWING

Upon clicking the *Drawing* button, the Enter/View Images Screen will appear as shown in Figure 3-41. To upload a new resident image, click on the *New* button on this screen.

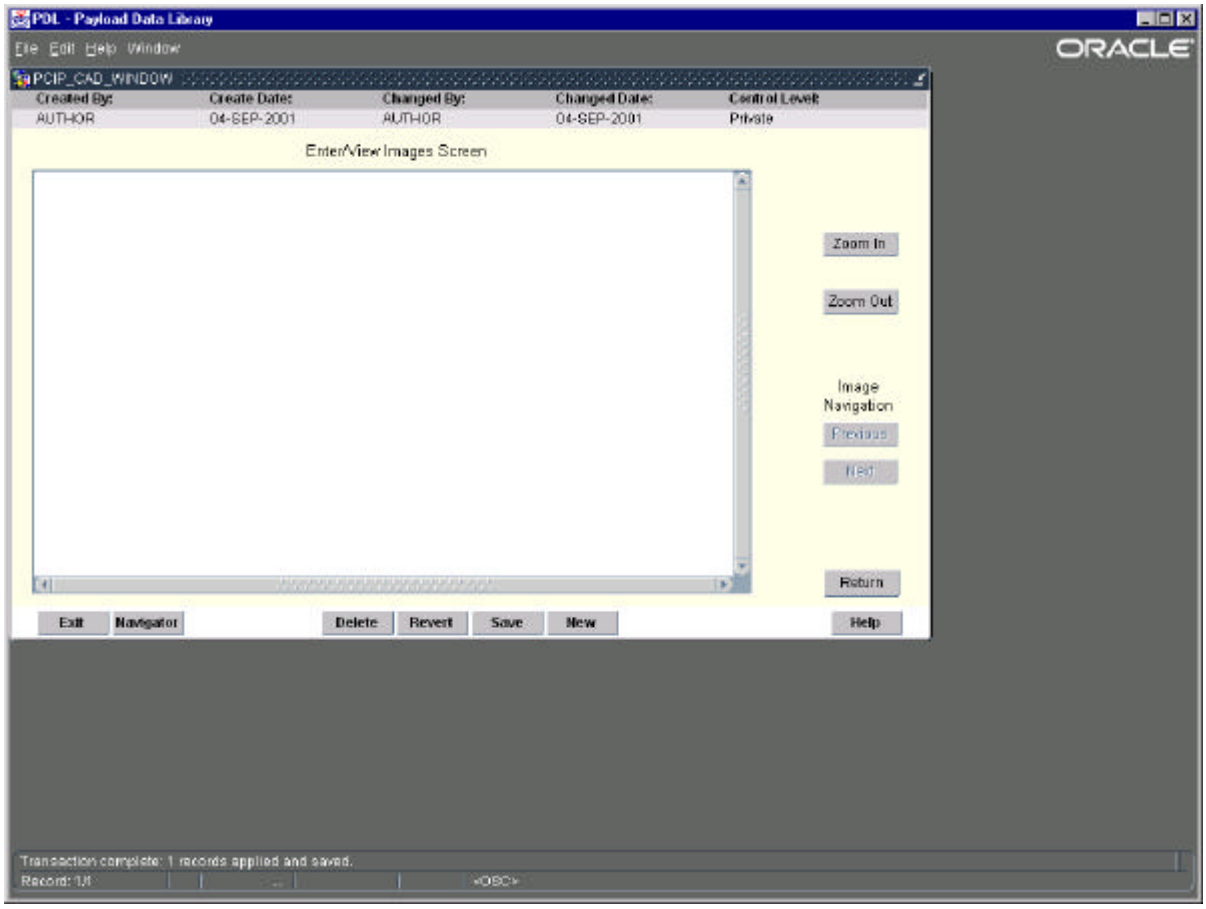

FIGURE 3-41 ENTER/VIEW IMAGES SCREEN

Upon clicking the *New* button, the Enter Image File Information window will appear as shown in Figure 3-42. *Note: If the image does not exist on the Webserver, you must upload the image before clicking the "Read Image File" button.*

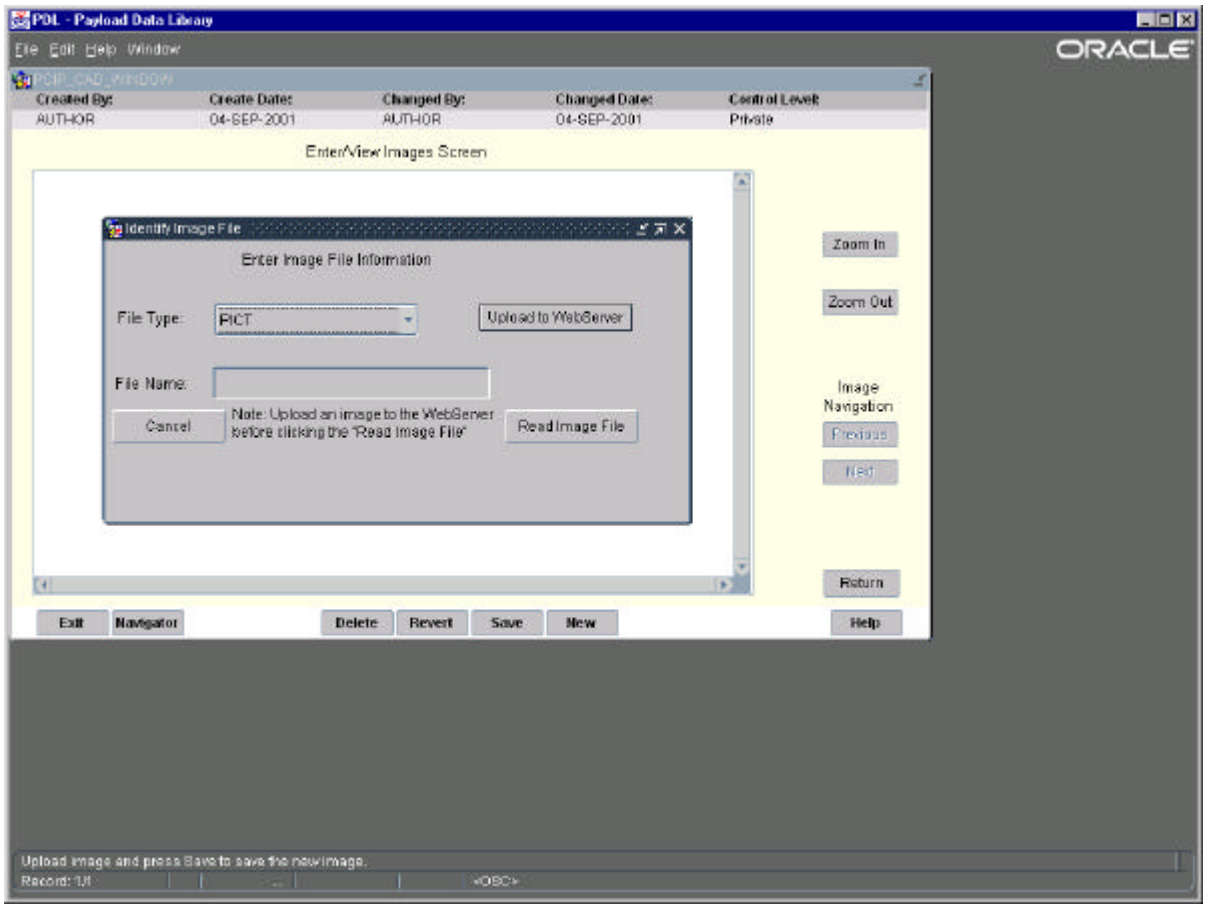

FIGURE 3-42 ENTER IMAGE FILE INFORMATION WINDOW

To upload an image to the webserver, click on the *Upload to Webserver* button and the Upload Images to the PDL Webserver Screen will appear as in Figure 3-43. You must browse for the image(s) by clicking on the *Browse* button or enter the file name with the correct path and then press the *Upload* button to send this image to the webserver. Close this screen and return to the previous window shown in Figure 3-42.

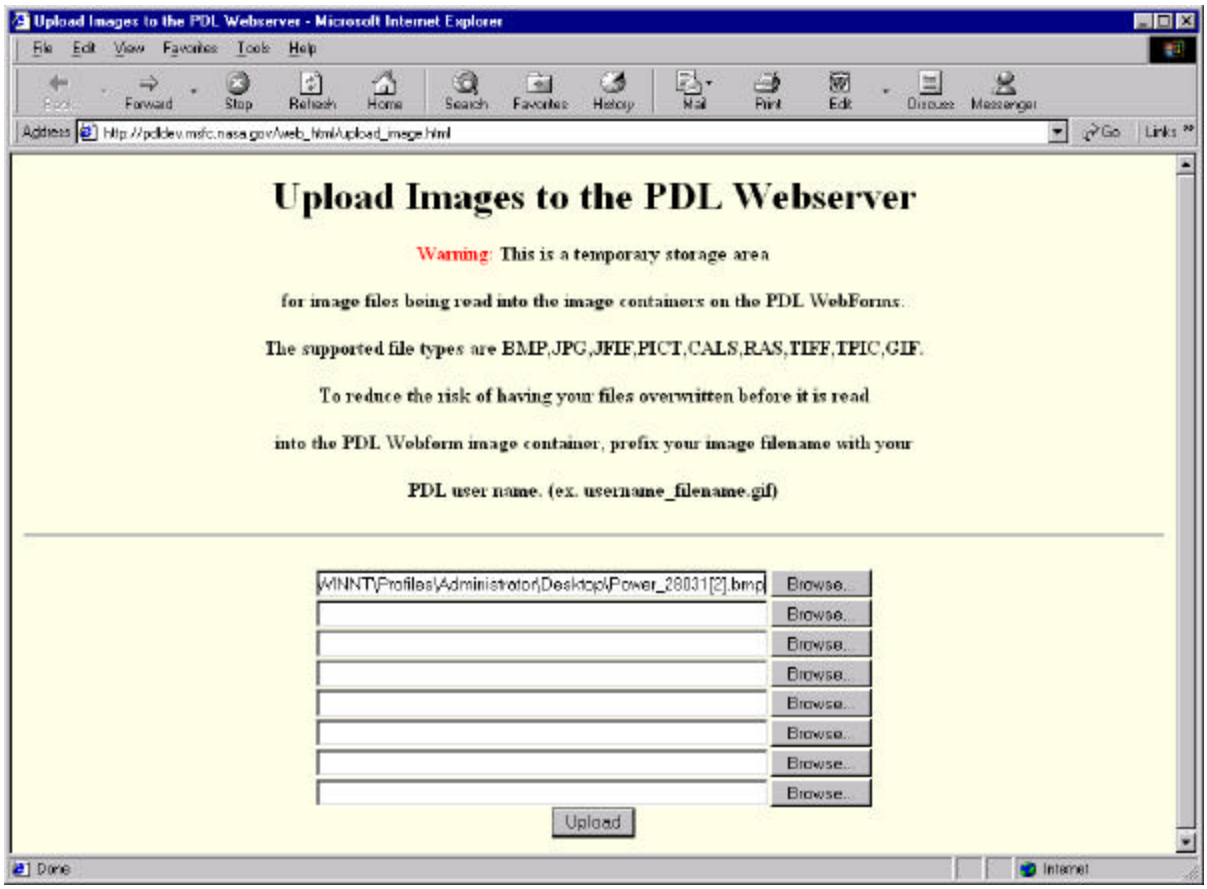

FIGURE 3-43 UPLOAD IMAGES TO THE PDL WEBSERVER SCREEN

To import an image file, you must specify the F*ile Type* and F*ile Name* (exact file name that was uploaded) then click the *Read Image File* button after entering the required file information as shown in Figure 3-44. Upon clicking the*Read Image File* button it will return to the Enter/View Images Screen which will be populated with the newly imported image for viewing as shown in Figure 3-45. Click on the*Save* button in order to save the imported image and its associated data. Click on the *Return* button to go back to the screen in Figure 3-40.

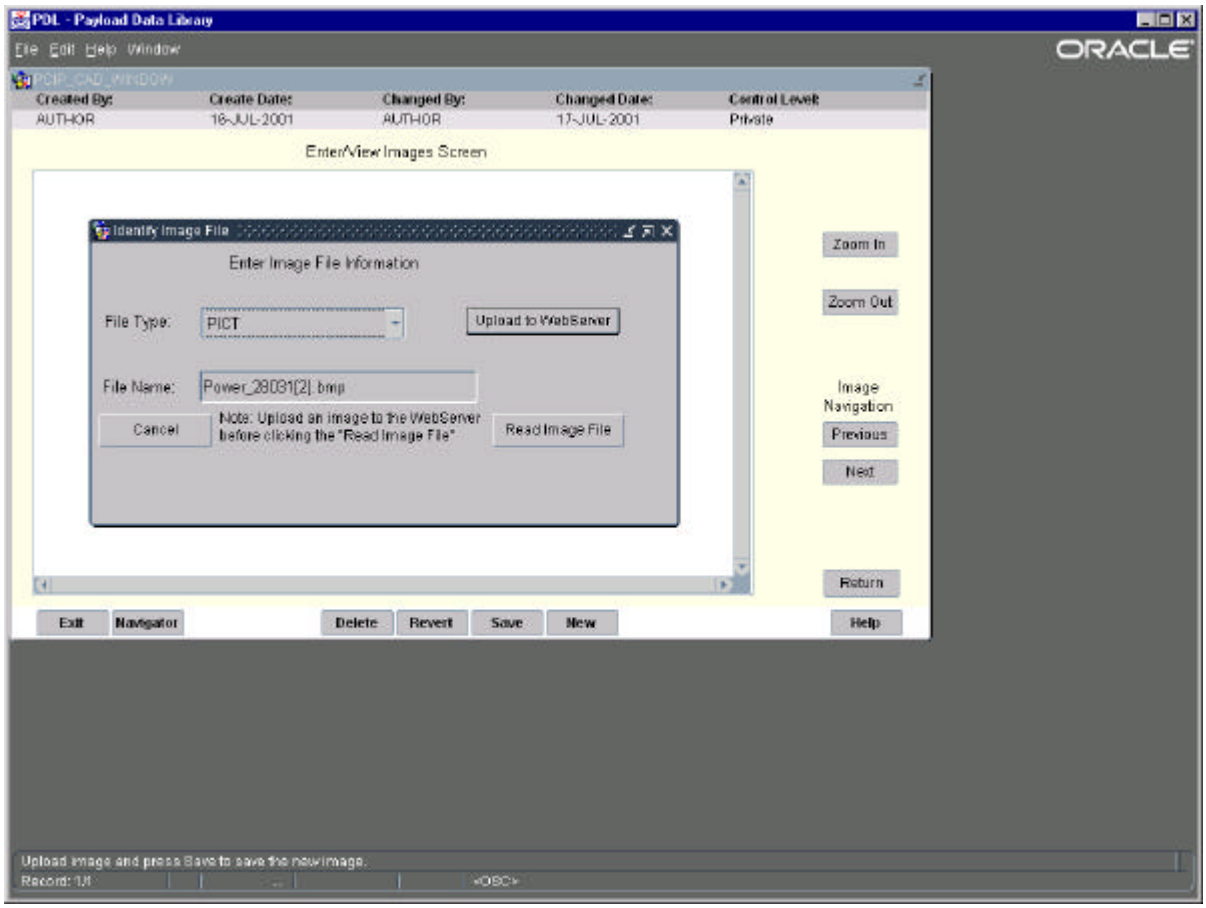

FIGURE 3-44 IMPORTING AN IMAGE FILE

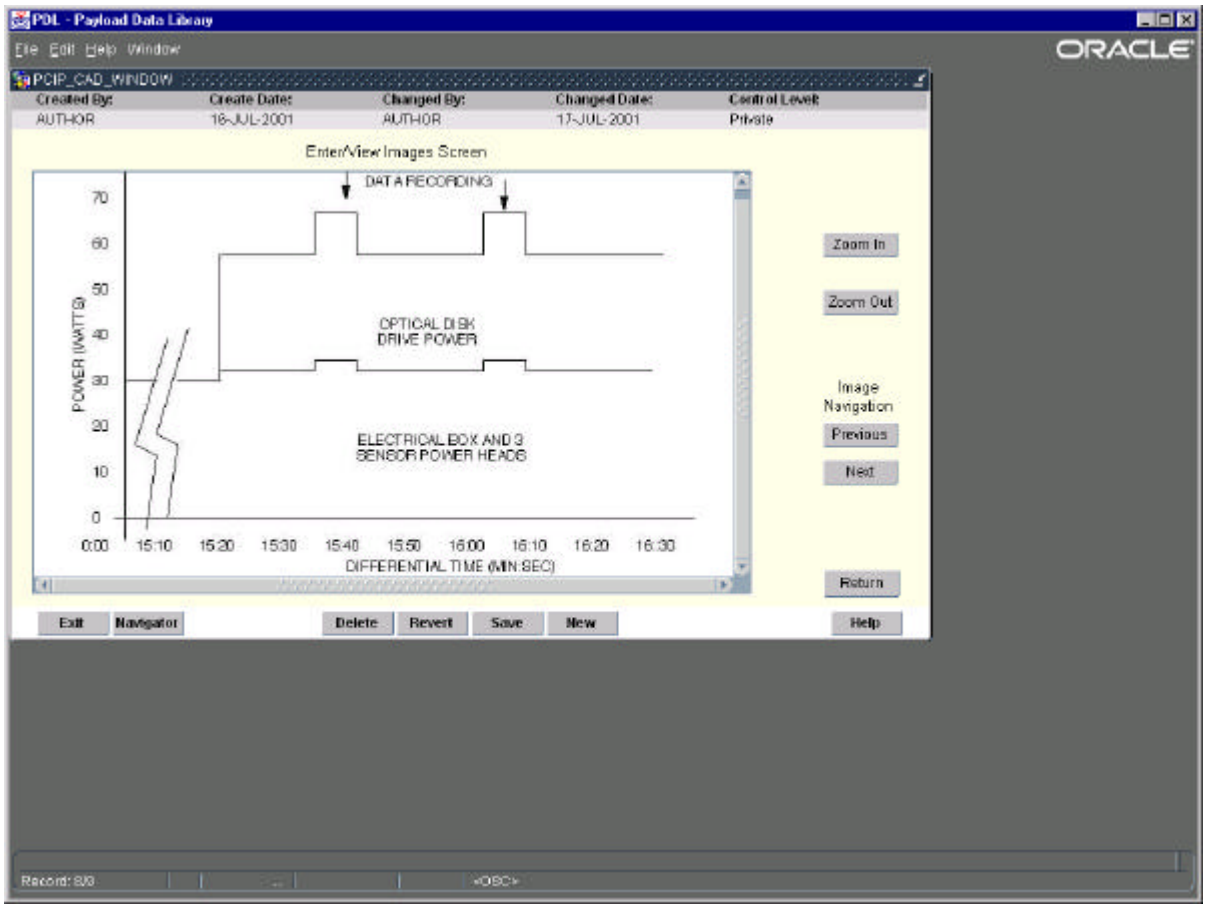

FIGURE 3-45 VIEWING THE IMPORTED IMAGE

3.10.2 EXPRESS Payloads

The only difference in importing and reviewing graphics between EXPRESS and Pressurized is how the resident and non-resident selection is made. Figure 3-46 shows a sample screen for importing/viewing graphics associated with On-Orbit Configuration Drawings. To view an image already loaded in PDL, select the drawing from the list and click the *Image* button. If it is a resident image, it will appear; but if it is a non-resident image, it will need to be downloaded the same as for pressurized payloads.

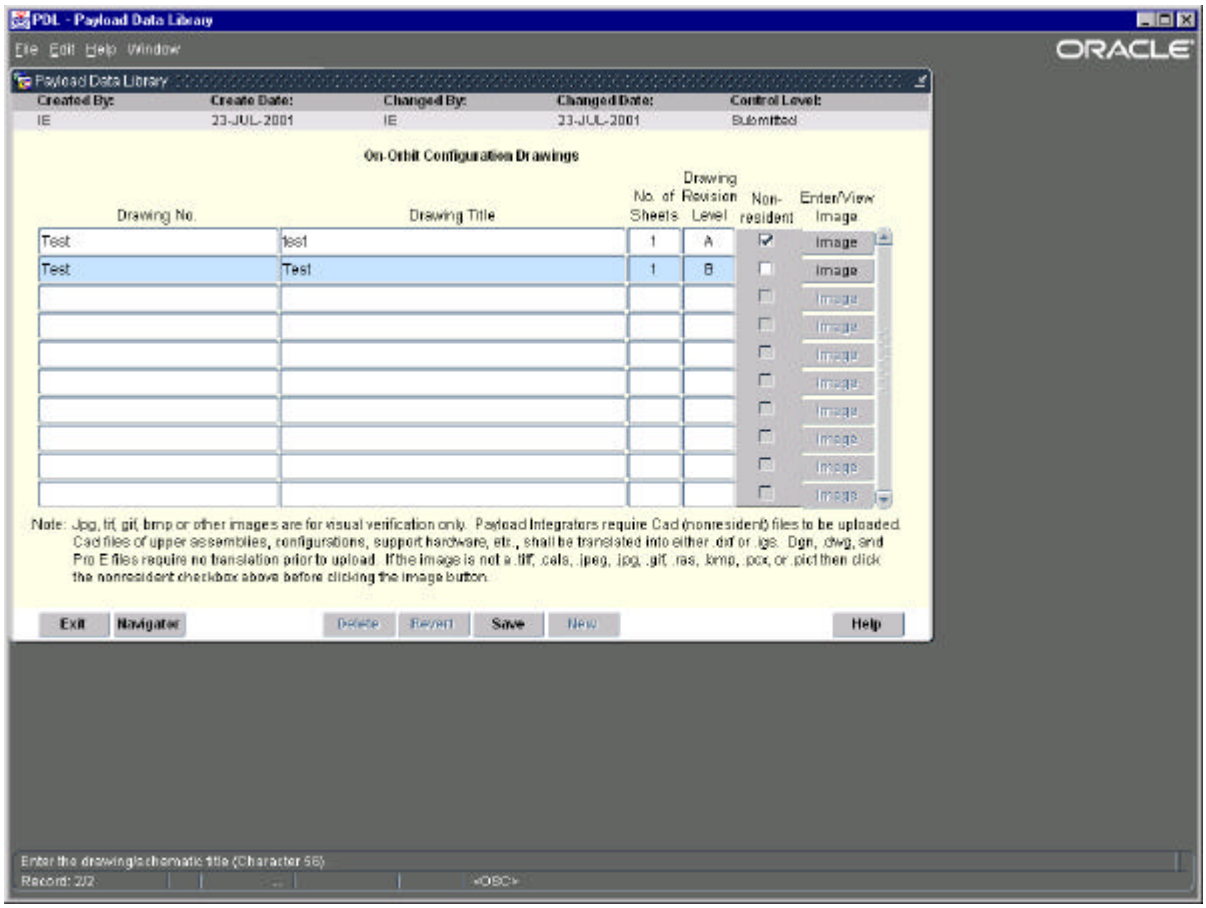

FIGURE 3-46 ON-ORBIT CONFIGURATION DRAWINGS SCREEN

To import a new graphic for the sample screen in Figure 3-46, click the *New* button to add the *Drawing No.*, *Drawing Title*, *No. of Sheets*, and *Drawing Revision Level*. If the image is non-resident, check the *Non-Resident* box and follow the directions noted at the bottom of the screen. Upon clicking the *Image* button, the Upload/Download Content Screen will appear as shown in Figure 3-34. Importing the non-resident image into PDL is the same as described in Section 3.10.1.1 for the Pressurized Payloads (see Figures 3-34 through 3-39).

If the image is resident, do not check the *Non-Resident* box. Upon clicking the *Image* button, the Enter/View Images Screen will appear as shown in Figure 3-41. Importing the resident image into PDL is the same as described in Section 3.10.1.2 for the Pressurized Payloads (see Figures 3-41 through 3-45).

Once all images have been loaded, return back to the screen shown in Figure 3-46 and click on the *Save* button in order to save the imported image(s) and its associated data. Click on the *Exit* button when finished to exit this screen.

3.11 ACCESSING C&DH, EXPRESS, AND WORF APPLICATION

At the Payload Selection screen identified in Figure 3-4, the user has the capability to go directly to the C&DH application including the EXPRESS and WORF systems.

The *CDH_Only* button will only be enabled, if the user has privileges to the C&DH dataset. Click on the *CDH_Only* button located at the bottom of the screen between the *Accept* and *Cancel* buttons to access the C&DH, EXPRESS, and WORF application screens.

3.11.1 C&DH, EXPRESS, and WORF Users

The C&DH, EXPRESS and WORF application will have five types of users:

A. Author [Payload Developer (PD)] - can only update records when the control level is "Private"

B. Integration Engineer (IE) [IE/Flight Projects Directorate (FD)/Payload Software Integration Verification (PSIV)] - can only update records when the control level is at one of the Integrated levels

C. Data Set Manager (DSM) [Payload Engineering Integration (PEI)] - can only update records when the control level is at one of the Integrated levels

D. Configuration Manager (CM) - can update records at the "Baselined" level

E. PL_ReadOnly [Read Only] - can only view records

The following are the Promote/Demote capabilities of each user at the Sub-element level:

A. Author [PD] - can only promote to the Integrated "Submitted" level for each development level

B. IE [IE/FD/PSIV] - can only demote back to the "Private" level for each development level when the control level is at the Integrated "Submitted" level

C. DSM [PEI] - can promote/demote at any Integrated level for each development level

D. CM - can not promote or demote

E. PL_ReadOnly [Read Only] - can not promote or demote

3.12 UNDERSTANDING THE CDH, EXPRESS, AND WORF MAIN MENU SYSTEM

After successfully logging into CDH_ONLY, the main menu is displayed at the top of the screen as shown in Figure 3-47. The CDH application main menu consists of *File*, *Report*, *Help*, and *Window* menu selections. These menus selections are discussed in the following sub-sections in greater detail.

FIGURE 3-47 CDH_ONLY MAIN MENU SYSTEM

3.12.1 File Menu Selection

The pull-down under the *File* menu selection includes the *exit* menu item as shown in Figure 3-48. This allows the user to exit the C&DH application and return to the Payload Selection Screen identified in Figure 3-4.

FIGURE 3-48 FILE MENU SELECTION

3.12.2 Report Menu Selection

The *Report* menu selection allow users to generate a Standard Report based on the selection criteria on the screen as described later in Section 3.15.2.

3.12.3 Help Menu Selection

In addition to the Help icon on the toolbar, the *Help* menu selection allows the user to access help information as shown in Figure 3-49. The selectable items under the *Help* menu include *About…*(information on software version), *SSP 57002*, *PDL User's Guide*, *Display Errors*, and *Problem Reports*. These are discussed in more detail in the following sub-sections.

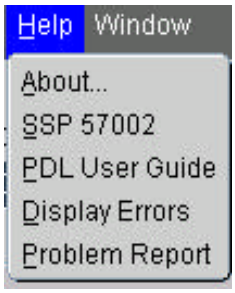

FIGURE 3-49 HELP MENU SELECTIONS

3.12.3.1 About

Normally provides information about Oracle database and application (such as version number, copyright, legal, licensing notices, and serial number). This feature is currently not available.

3.12.3.2 SSP 57002

Select *SSP 57002* from the *Help* menu to access the Payload Software Interface Control Document Template (SSP 57000) document. This hyperlink takes you to the International Space Station Payloads Software Control Panel website. To view the document, select *ISS Payloads Office Documents*. You can then select *SSP 57002* from the list of Baselined Documents and Revisions section. Once the next page is displayed, select *Current Configuration* and another page is displayed with the current revision. Once selected a PDF format of the document will be displayed by Arobate Reader.

3.12.3.3 PDL User Guide

This selection item will display the most recent version of the PDL User's Guide describing the latest software functionalities, including the new PDL web client. It is available in PDF format.

3.12.3.4 Display Errors

The *Display Errors* menu item provides the user extra information related to the Oracle errors encountered while running the application.

3.12.3.5 Problem Reports

To send comments to the PDL Team, choose *Problem Reports* from the *Help* menu. Your username, current date, current version number, computer platform, current discipline title, current option title, current section title, and the next comment number autofills. Type a message, comment, question, or problem in the description of problem field (this is the only field that the user can update). Click the *Save* button to send the comment to the PDL team. The *First* and *Last* buttons will move the pointer to the first and last records in the list respectively. The *Previous* and *Next* buttons will move the pointer one record backward or forward from the current record. Clicking the *Revert* button will revert the data to the last saved version. The *New* button will allow the user the ability to add new problem reports into the system. *Exit* button returns to the previous screen. Use the comment number to check the status of the PDL response to your comment.

3.12.4 Window Menu Selection

The *Window* menu allows the user the ability to view more than one screen at the same time when working with multiple screens by positioning the widows displayed as *Cascade*, *Tile Vertically*, or *Tile Horizontally* (see Figure 3-50). It also displays the name of the active screens.

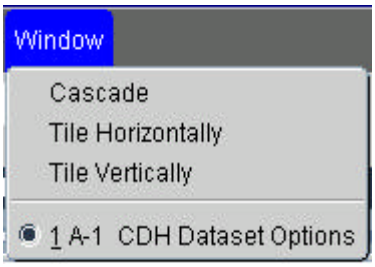

FIGURE 3-50 WINDOW MENU SELECTIONS

3.12.4.1 Cascade

The *Cascade* menu selection item allows the user to stack the windows one over another.

3.12.4.2 Tile Horizontally

The Tile Horizontally menu selection item allows the user to stretch each window the full width of the screen and stacks them one on top of the other.

3.12.4.3 Tile Vertically

The *Tile Vertically* menu selection item stretches the windows vertically and arranges them side-by-side across the screen.

3.13 UNDERSTANDING THE CDH, EXPRESS, AND WORF TOOLBAR

The toolbar menu will be similar to those in Microsoft products. Tab menus will guide the user to selected areas. The toolbar menu with Icons will provide the user a means to accomplish special operations. The toolbar operations can be performed by clicking on a familiar Icon as described in Figure 3-51.

ICON	OPERATION	FUNCTION
	SAVE	Save record(s) to the database
	PRINT	Print a copy of the screen
	DELETE	Delete a record
	INSERT	Insert a record
	PREVIOUS RECORD	Go to the previous record
	NEXT RECORD	Go to the next record
	CLEAR FIELD	Clear contents of a field
	REVERT	Revert changes from time of save
	ENTER QUERY	Clear screen, adjust screen for query mode
	EXECUTE QUERY	Retrieve record(s)
	CANCEL QUERY	Cancel query request
	EXIT	Exit screen return to PDL Tree
	COPY RECORD	Copy a record

ICON	OPERATION	FUNCTION
	PREVIOUS FOLDER	Go to the previous folder
	HELP	Display the help document

FIGURE 3-51 TOOLBAR OPERATIONS AND ICONS

3.14 UNDERSTANDING THE CDH, EXPRESS AND WORF SCREENS

Once logged into the C&DH application, the PL Data screen (A-1) in Figure 3-52 is the first screen you will encounter. On this screen the user has the capability to perform maintenance, query information, or move to other C&DH screens (Reference Figure 3-53) by using the Tab menu at the top of the current screen. Click on the Tab for the topic desired. Tabs will be enabled based on flags and calibration type.

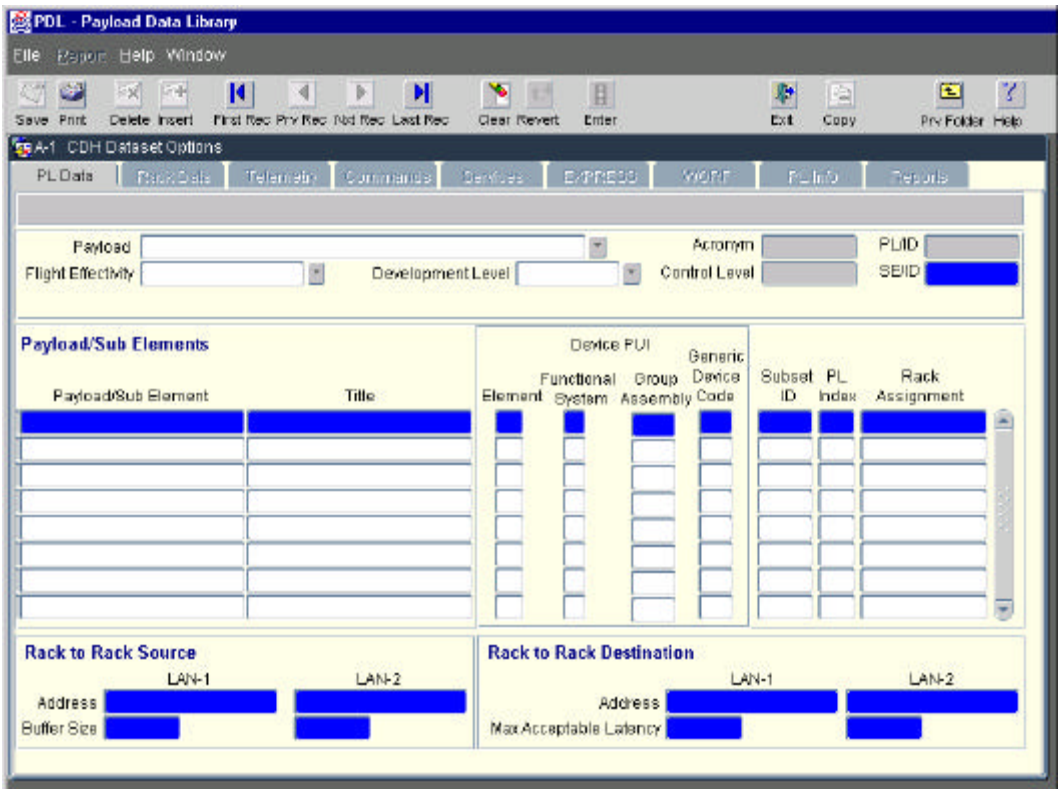

FIGURE 3-52 PL DATA SCREEN (A-1)

SCREEN NO.	SCREEN NAME	SCREEN NO.	SCREEN NAME
CDH Dataset Options		Commands – Cmd Correlation Init & Cmd Source Reqts	
A-1	PL Data	A-24	Command Init
A-2	Rack Data	A-25	Command Def
Telemetry – Param Correl Init & Param Process Reqts		A-26	PLMDM
A-3	Param Init	Commands – Command Definition	
A-4	Param Def	A-27	POIC/Remote
A-5	Ground Proc	A-28	TLM Verification
Telemetry – Cal/LES Definitions		Commands – Field Definition	
A-6	Point Pairs	A-29	Field Init
A-7	Polynomials	A-30	Field Def
A-8	State Codes	Commands – Calibration Definitions	
A-9	Expected States	A-31	Point Pairs
A-10	Limit Sensing	A-32	Polynomials
Onboard – Parameter Processing Reqts		A-33	State Codes
A-11	Onboard Proc	Services	
A-12	PLMDM	A-34	Broadcast
Onboard – Param Processing Reqts – PCS Definitions		A-35	Ancillary
A-13	PCS	A-36	LRDL FTS
A-14	Polynomials	A-37	Timeliner Def
A-15	Linear	A-38	Video
Telemetry – Packet Definition		PL Info	
A-16	LRDL	A-39	Contact Info
A-17	MRDL	A-40	PL Info
A-18	HRDL	A-41	Process
A-19	Packets	Promote	
A-20	Content Def	A-42	Promote
Telemetry – Packet Counter Definition		Drawings	
A-21	Counter Def	A-43	Drawings
Telemetry – Packet Subset Definition			
A-22	Subset Format		
A-23	Subset Content Def		

FIGURE 3-53 C&DH SCREENS

The user also has the capability to access the EXPRESS screens provided in Figure 3-54 or the WORF screens provided in Figure 3-55 by selecting the *EXPRESS* or *WORF* tabs.

SCREEN NO.	SCREEN NAME	SCREEN NO.	SCREEN NAME
EXP_001	Req Resource	EXP_007	Rack Interface
EXP_002	RS 422 Data	EXP_008	Data Sum
EXP_003	Ethernet Data	EXP_009	Power Sum
EXP_004	Express Laptop	EXP_0010	RIC Config
EXP_005	Ancillary Data	EXP_0011	PEHB LAN CAM
EXP_006	EI Payload Assignment	EXP_0012	Rack Thermal

FIGURE 3-54 EXPRESS SCREENS

SCREEN NO.	SCREEN NAME	SCREEN NO.	SCREEN NAME
WORF_001	Req Resource	WORF_006	EI Payload Assignment
WORF_002	RS 422 Data	WORF_007	RIC Config
WORF_003	Ethernet Data	WORF_008	PEHB LAN CAM
WORF_004	WORF Laptop	WORF_009	Rack Thermal
WORF_005	Ancillary Data		

FIGURE 3-55 WORF SCREENS

The user must first select a payload from a provided list by clicking on the arrow beside the payload field. A screen of valid payloads will appear as seen in Figure 3-56. The payload list is determined by user's access based on the PDL security table. After a payload has been selected from this list, the cursor is moved to the flight effectivity field. The user must select a flight effectivity from a provided list by clicking on the arrow beside the flight effectivity field. A valid flight effectivity screen similar to the valid payloads screen in Figure 3-56 will appear. The flight effectivity list is determined by the user's access to that payload. After a flight has been selected from this list, the cursor is moved to the development level field. The development level is selected in the same manner as described above. Fields that are grayed out are display fields and will not allow the user to enter data.

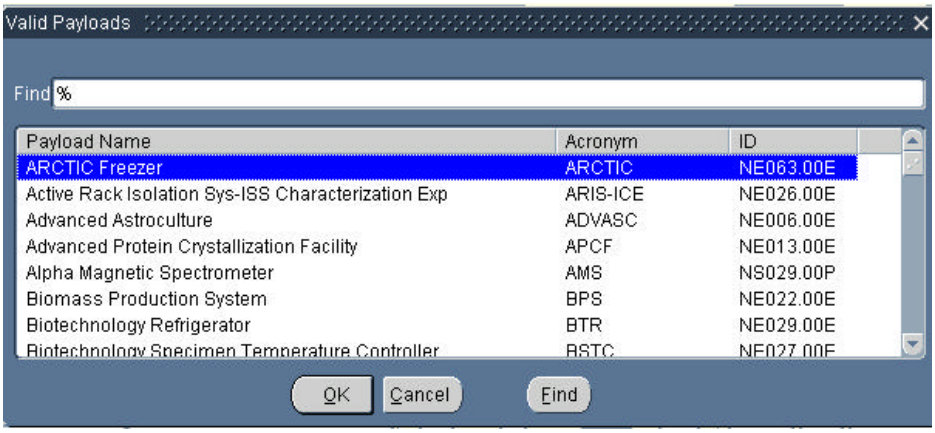

FIGURE 3-56 VALID PAYLOADS SCREEN

When fields do not meet validation criteria when queried, they will be displayed in a dark red color to indicate a validation error. After the field has been corrected, the field will be displayed in a normal color. When fields are entered that do not meet validation criteria a pop-up dialog box will be displayed with a user-friendly error message. The user must acknowledge the message and correct the data before continuing. A hint message will be displayed at the bottom of each screen depending on the location of the cursor. The hint message will identify the field, size (format), and the possible values or a message to indicate a valid list of values.

When all specified fields are populated as shown in Figure 3-57 the other applicable tabs become accessible. The *EXPRESS* tab is enabled only when an EXPRESS payload is selected (Figure 3-57 example: ZCGSUBONE). The WORF payload is accessible only when a WORF payload is selected (example not shown in Figure 3-57).

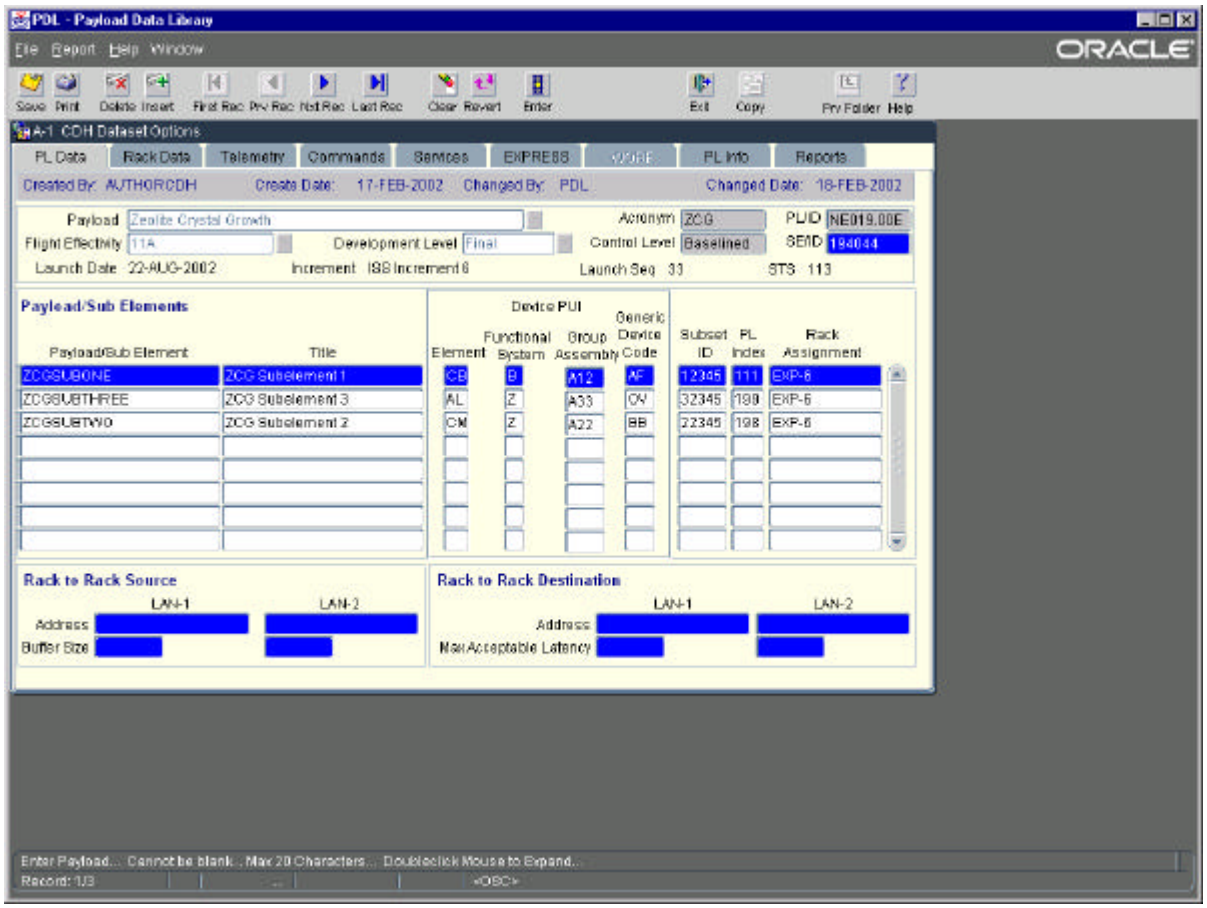

FIGURE 3-57 PL DATA SCREEN (A-1) POPULATED

3.15 GENERATING C&DH, EXPRESS, AND WORF REPORTS

3.15.1 Screen Print Reports

To activate a screen print report, click the *Print* Icon on the Toolbar menu.

3.15.2 Standard Screen Reports

To activate a standard screen report, select *Report* from the main menu. A report will be generated based on the selection on the screen.

3.15.3 Comparison Reports

Comparison Reports will be under the Reports Tab on the main C&DH Dataset Options Tab menu (**C&DH REPORT ONLY**).

3.15.4 Hazard Reports

The Hazard Report will be under the Reports Tab on the main C&DH Dataset Options Tab menu (**C&DH REPORT ONLY**).

3.15.5 Custom Reports

Custom Reports will be under the Reports Tab on the main C&DH Dataset Options Tab menu.

3.16 C&DH FIGURES AND DRAWINGS

Figures and drawings for C&DH will be accessed by selecting PL Info from the main C&DH Dataset Options Tab menu and then by selecting Drawings from the PL Info Tab Menu. There are no figures and drawings for EXPRESS or WORF.

SECTION 4, USING THE PDL WEBSITE

4.1 PDL WEBSITE

The PDL website was created to satisfy the need for people to access PDL information across the Internet. A visitor without a PDL user account can view basic information about PDL on pages such as the News and Frequently Asked Questions (FAQ). The visitor can also apply for a PDL users account through the *PDL Request Forms* page as described in Section 4.2.4. Users who already possess a PDL account can run the web-based version of the PDL client.

The PDL website can be accessed through the Internet at the address: http://pdl.hosc.msfc.nasa.gov.The PDL website is divided into two groups of pages: those that can be viewed by all visitors and those that require a PDL user account to access.

4.1.1 PDL Public Pages

Those pages that can be reached without a PDL user account are called "public" pages because they can be viewed by any Internet user. Unless otherwise explicitly stated, most of the pages discussed in the following sections are considered "public" pages.

4.1.2 PDL User Pages

The PDL website contains pages that can only be reached by a user who already has a PDL user account. When the user selects one of these private pages, a PDL logon box will appear on top of the current window. The user must enter a PDL user name and password before the web page is displayed.

Figure 4-1 shows the logon box that is displayed when a user selects a private page from the navigation menu. If the user correctly enters a valid PDL user name and password combination and clicks *OK*, the requested web page will be displayed. If the user does not enter the logon information or if the information is not valid, the logon box will remain displayed. After three incorrect logon attempts or if the user clicks the *CANCEL* button, the logon box will disappear and the following message will be displayed: "*This document is protected. You must send the proper authorization information to access it.*"

The one exception to this logon scheme is when the user starts up the web client for either the PC or the Mac. In that case a new screen window is opened and the standard PDL logon form is displayed. See Figure 3-2 for an example of the PDL logon form.

FIGURE 4-1 PDL WEB PAGE LOGON BOX

Notice the small check box below the password line. Clicking on the check box will save the user's PDL user name and password to a browser file. The next time the user comes to a similar logon box, the user name and password will be filled in automatically. This will happen even if the user has shutdown and restarted the browser. This feature also means that your PDL user name and password will be filled in for any other user who uses your machine and tries to access PDL through the website. *PDL does not recommend saving your password in this way.*

4.2 THE NAVIGATION MENU BAR

The top portion of the PDL web page contains a navigation menu bar that is always displayed when the PDL website is up. Upon selection some menu items display additional selection options. The menu provides a quick way to jump to a particular PDL page of interest. Figure 4-2 shows an example of the basic navigation menu bar from the top frame on the PDL page.

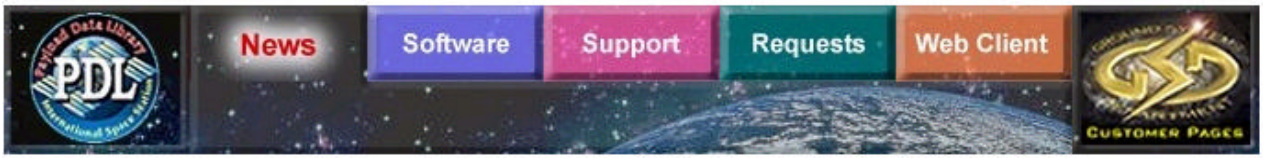

FIGURE 4-2 TOP NAVIGATION MENU BAR

The left side of the page contains a *PDL Quick Login* and a *Quick Start* Bar as shown in Figure 4-3. The *PDL Quick Login* allows users to log onto the PDL Web Client easily without having to select additional buttons. If the user has a PC select the word *WIN* or the icon and if the user has a Mac select the word *MAC* or its icon. The *Quick Start* bar gives users the ability to quickly go to the areas to apply for an account, get necessary plug-ins, and provides another avenue for logging onto the PDL Web Client.

The following sub-sections describe the screens and functions available to visitors and PDL users across the Internet. All figures included in this section are from the PDL website as viewed using Internet Explorer 5 on a PC. If you access the PDL website through a Netscape browser or on a Mac, what you see may be different from the pictures in this document.

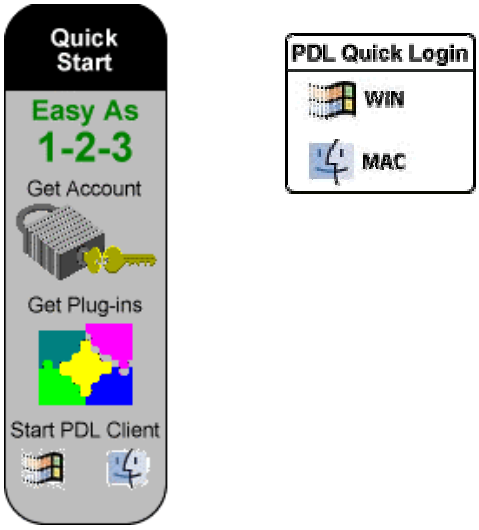

FIGURE 4-3 QUICK START BAR AND PDL QUICK LOGIN

4.2.1 PDL News Page

The PDL *News* page is the first public page displayed to all visitors to the PDL website. It contains information about the current version of the PDL software, information about how to set up a Macintosh computer to access PDL, and other general information such as the phone number for the PDL Helpline. Figure 4-4 shows an example of the PDL News page.

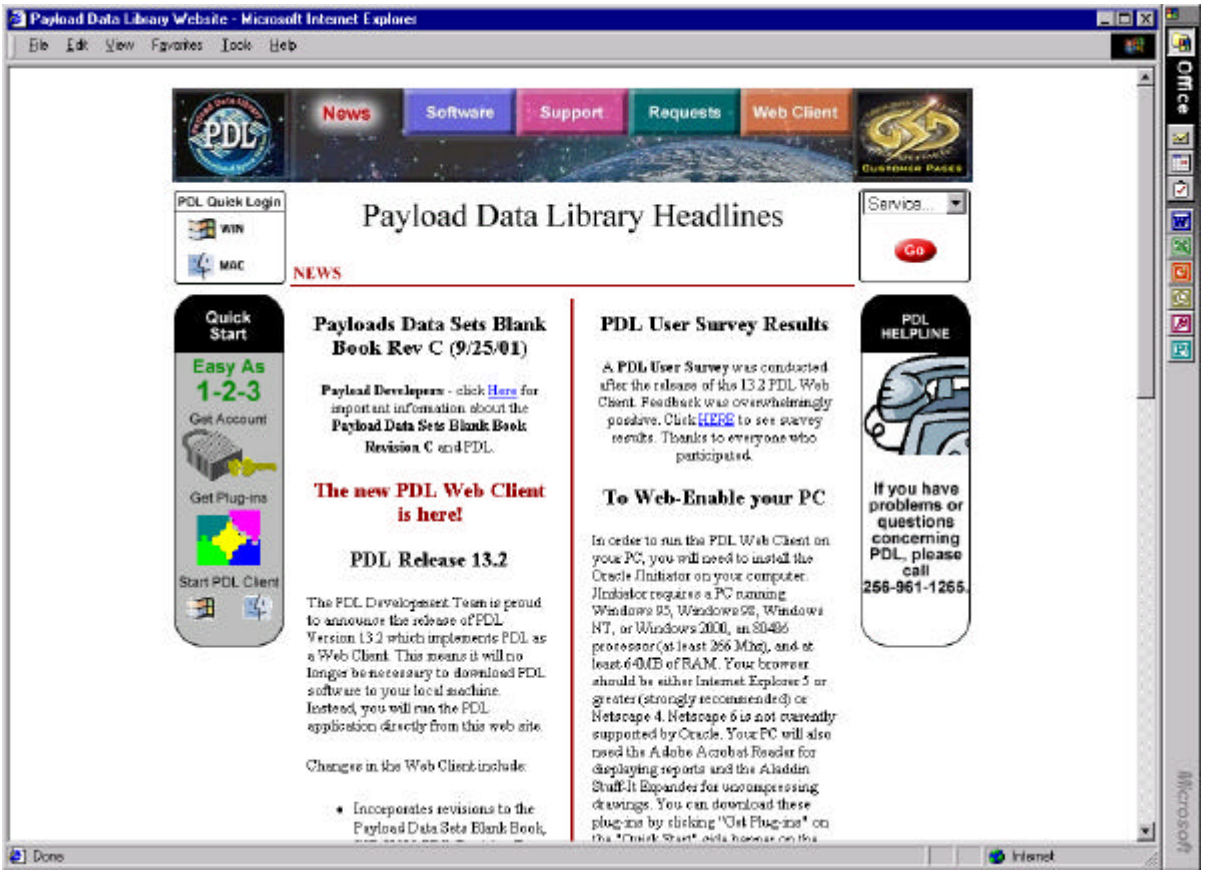

FIGURE 4-4 PDL NEWS PAGE

Not shown in this screen shot is the welcome message from the Ground System's Department manager which reads:

A Note from the MSFC Ground Systems Department Manager:

Ground Systems personnel are committed to meeting the needs of our customers. Our responsible contact personnel for specific products and services will work with you on a routine basis to achieve this commitment. If this is not successful for you, feel free to contact me directly. Many thanks.

Ann McNair, Department Manager
email: Ann.McNair@msfc.nasa.gov
Phone: 256-544-2025

4.2.2 Software Page

The *Software* page contains the plug-ins necessary to successfully run the PDL web client as described in Section 4.2.5. These plug-ins are described in the following sub-sections and should be installed on the user's local computer. These plug-in pages are accessible to the public.

4.2.2.1 Java Plug-ins

In order to run the PDL web client, it is necessary for the user's local machine to be able to support the running of Java applets across the Internet. Figures 4-5A and 4-5B shows the page where you can download the Oracle Jinitiator for the PC or the MacOS Runtime for Java (MRJ) for the Mac. If the user has a PC, click on the *Download the Oracle JInitiator 1.1.8.10 plug-In* link to download the latest Oracle Jinitiator plug-in and save the executable file to the local hard drive. Do not try to open the file across the Internet. When it has been saved to the local hard drive, find the file and double-click to execute it. The page also contains instructions for how to install the software. Some browser versions may not compatible with the Jinitiator software. Please update the local browser if necessary.

Notice: For Windows 2000, do not install the plug-in under the "C:\Program Files" directory (the default). Create a new directory (for example C:\Jinitiator) and install the plug-in there. When the installer window shows you the suggested "Destination Directory", click on the "Browse" button and type in or select the directory you created.

If the user has a Mac computer, select *Download the Mac OS Runtime for Java (MRJ) 2.2 plug-in* at the bottom of this page. The user should follow the instructions on the page for installation. MRJ is configured to work with Oracle on the Mac the same way Jinitiator does on the PC.

Notice: If you have trouble uncompressing the MRJ or your Stuff-It program says the MRJ file is corrupt, you will need to get a newer version of Stuff-It. You can download a new Stuff-It Expander from this website. On the left navigation menu under "Software", click on "Stuff-It Plug-Ins." Scroll down to the Mac Stuff-It Expander. Install the new Stuff-It on your Mac and then return here to finish downloading and installing MRJ.

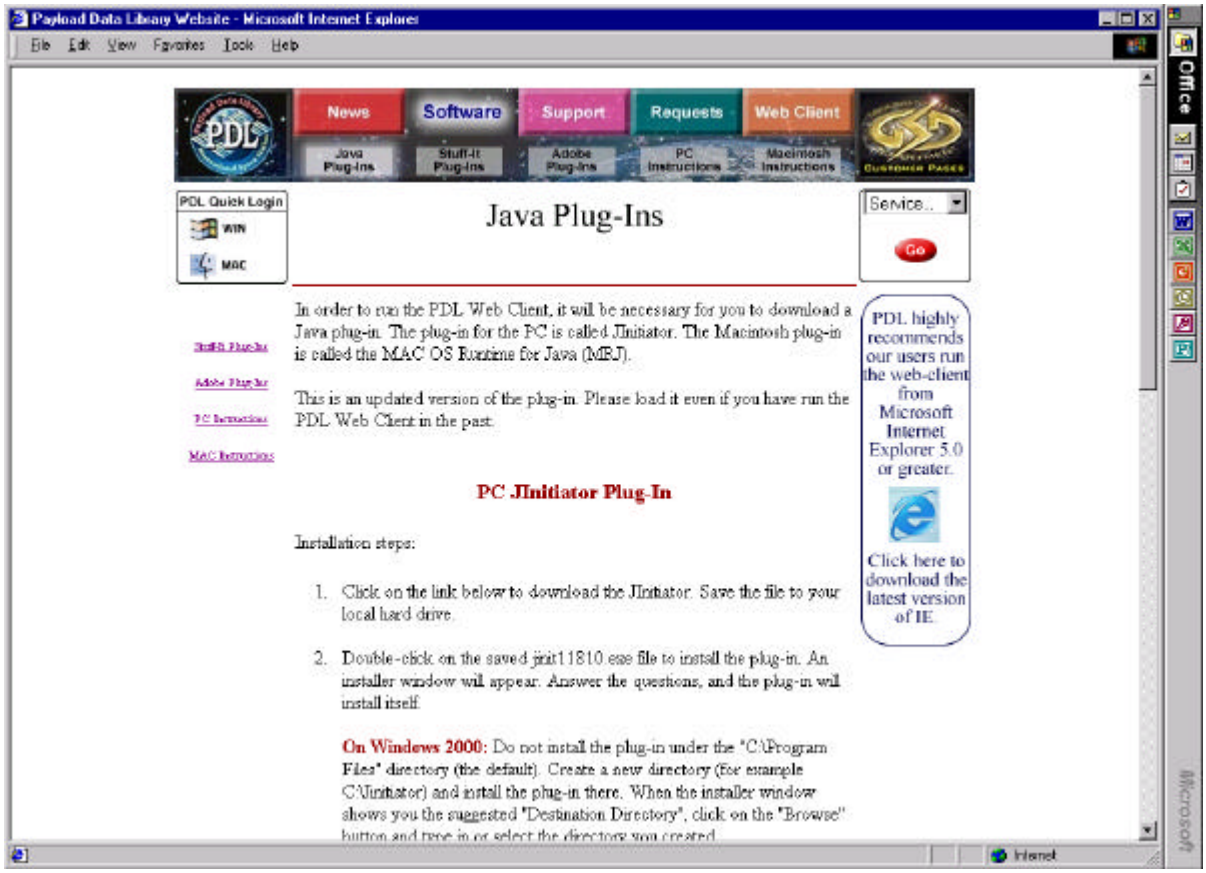

FIGURE 4-5A JAVA PLUG-INS PAGE (PC)

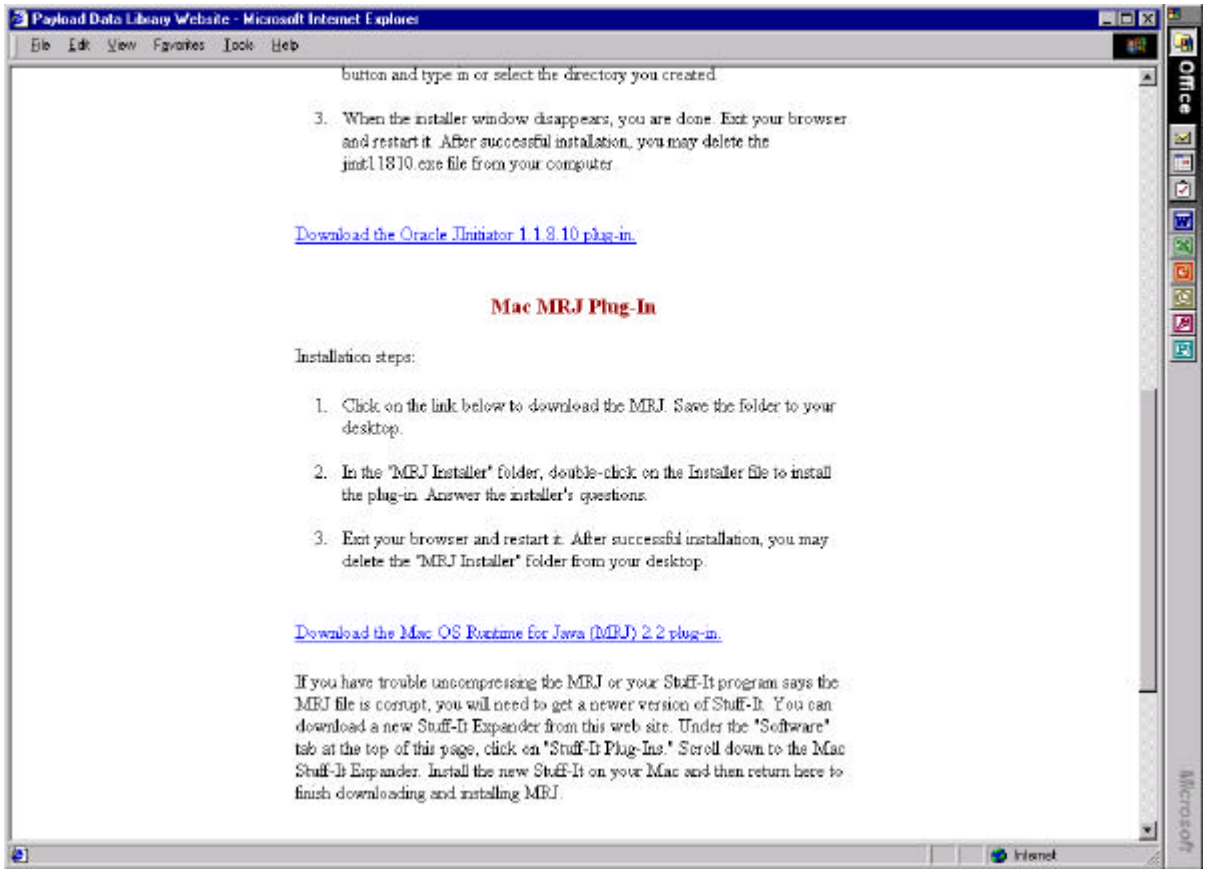

FIGURE 4-5B JAVA PLUG-INS PAGE (MAC)

4.2.2.2 Stuff-It Plug-Ins

In order to view compressed drawings and graphics retrieved from the PDL database, it will be necessary for you to download a browser plug-in for the Aladdin Stuff-It Expander from the page as shown in Figure 4-6. This plug-in will allow your browser to automatically uncompress the drawing, diagram or picture as it is retrieved from the database. PC users should select *Download the PC Stuff-It Expander plug-in* and the Mac users should select *Download the Mac Stuff-It Expander plug-in*. The steps are provided for both installations.

FIGURE 4-6 STUFF-IT PLUG-INS PAGE

4.2.2.3 Adobe Plug-Ins

This page contains the link to the Adobe website where you can download the latest version of the Acrobat Reader to your machine for viewing reports generated by the PDL web client as shown in Figure 4-7. This plug-in will allow your browser to automatically pop-up a display of a report you have run.

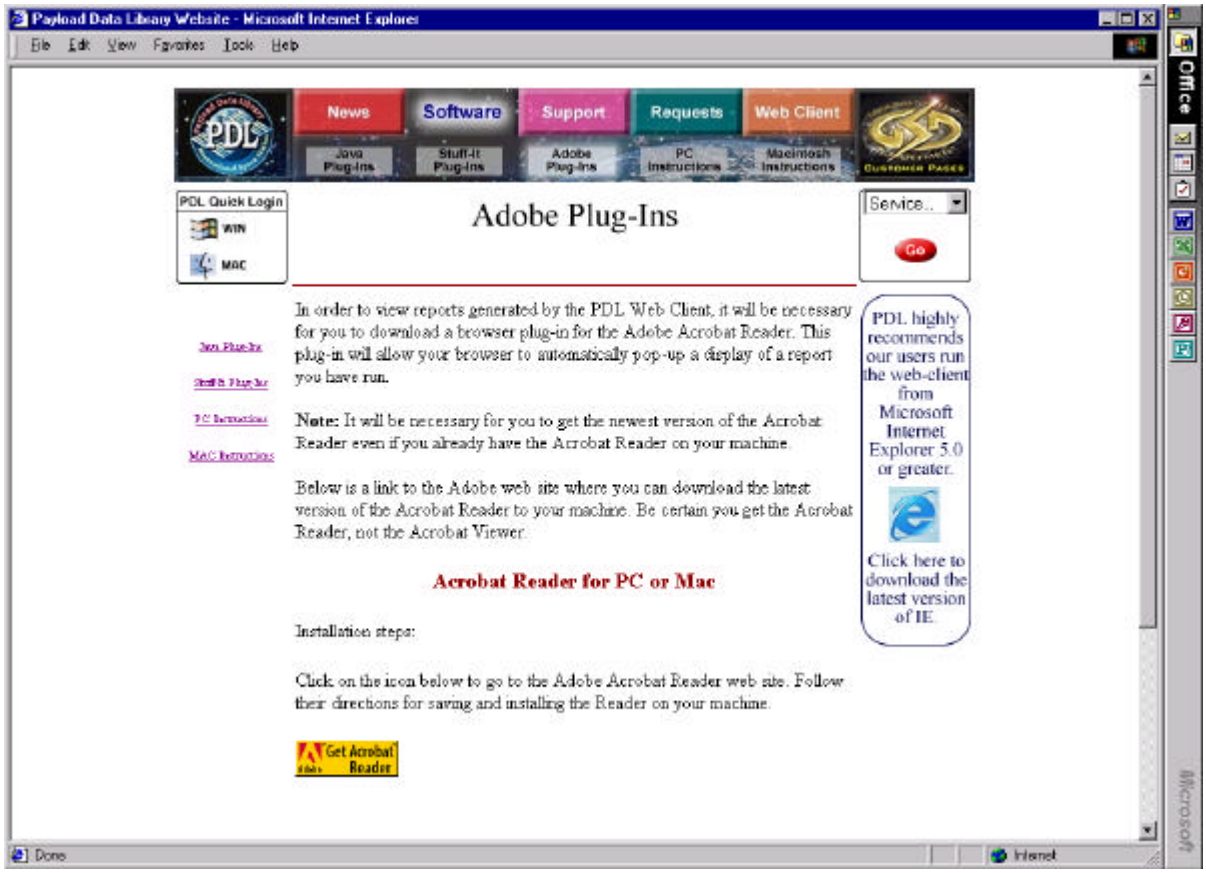

FIGURE 4-7 ADOBE ACROBAT READER PAGE

4.2.2.4 PC Instructions

The page shown in Figure 4-8 contains basic instructions for installing and running the PDL web client on your PC.

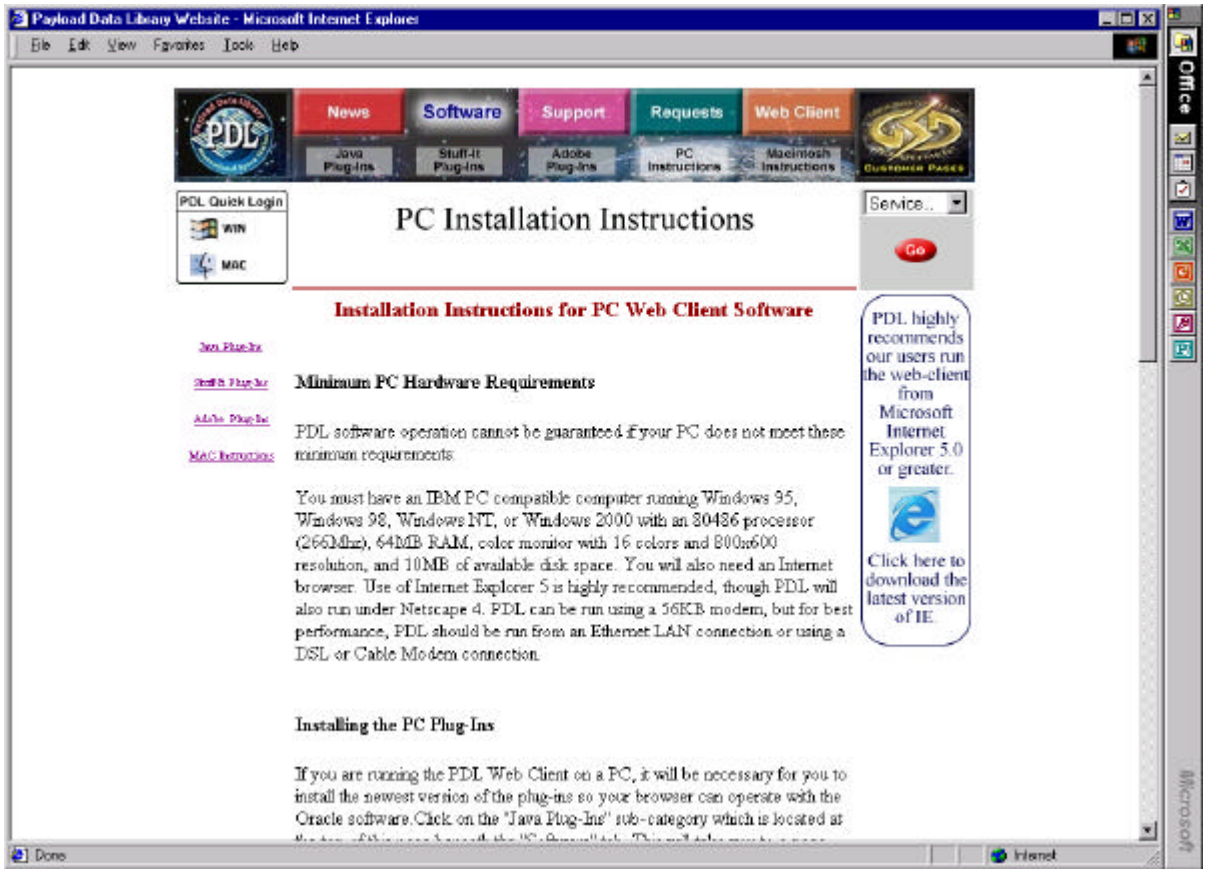

FIGURE 4-8 PC INSTALLATION INSTRUCTIONS PAGE

4.2.2.5 Macintosh Instructions

The page shown in Figure 4-9 contains basic instructions for installing and running the PDL web client on your Mac.

FIGURE 4-9 MAC INSTRUCTIONS PAGE

4.2.3 Support Page

The Support Page contains references to the PDL User's Guide, Data Set Contacts, Frequently Asked Questions, Other Related Documents, and Other Related Web Links. These pages are accessible to the public.

4.2.3.1 PDL User's Guide Page

This page contains the most recent version of the PDL User's Guide describing the latest software functionalities, including the new PDL web client (see Figure 4-10). It is available in PDF format for downloading.

FIGURE 4-10 PDL USER'S GUIDE PAGE

4.2.3.2 Data Set Contacts Page

The PDL *Data Set Contacts* page displays contacts for Express payloads, Pressurized payloads, and WORF payloads. Contact information includes the name of the data set, the name of the contact, and the contact's phone number. This information is provided as a convenience for current PDL users and for potential PDL users who need more information before requesting a PDL user account. Scroll down the Data Set Contacts page to view a complete list of EXPRESS, Pressurized, or WORF payload contacts.

Figure 4-11 shows a sample portion of Data Set Contacts page for EXPRESS payloads. Because the contacts for payloads frequently change, you should always consult the PDL web pages for the latest contact information.

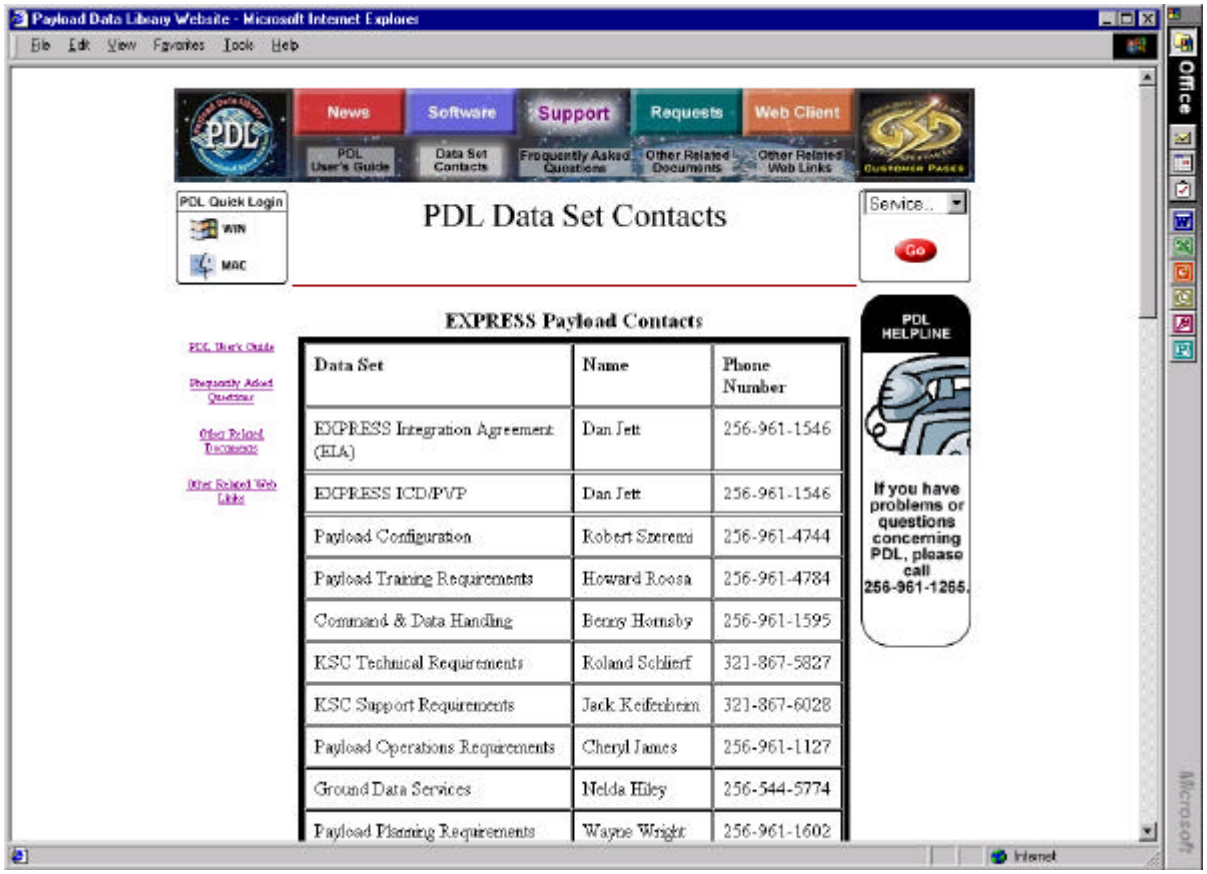

FIGURE 4-11 PDL DATA SET CONTACTS PAGE

4.2.3.3 Frequently Asked Questions (FAQ) Page

The *FAQ* page provides a variety of general information about PDL to the casual visitor and the potential PDL user. Figure 4-12 shows an example of the top of the PDL FAQ page. The questions at the top of page are hyperlinks. Click on a question, and the page will jump down to the part of the page where the answer is displayed. Alternately, the visitor can use the scroll bar on the right side of the page to scroll down through all of the questions. After each question is a hyperlink labeled “Back to Top” which will move control back to the questions at the top of the FAQ page.

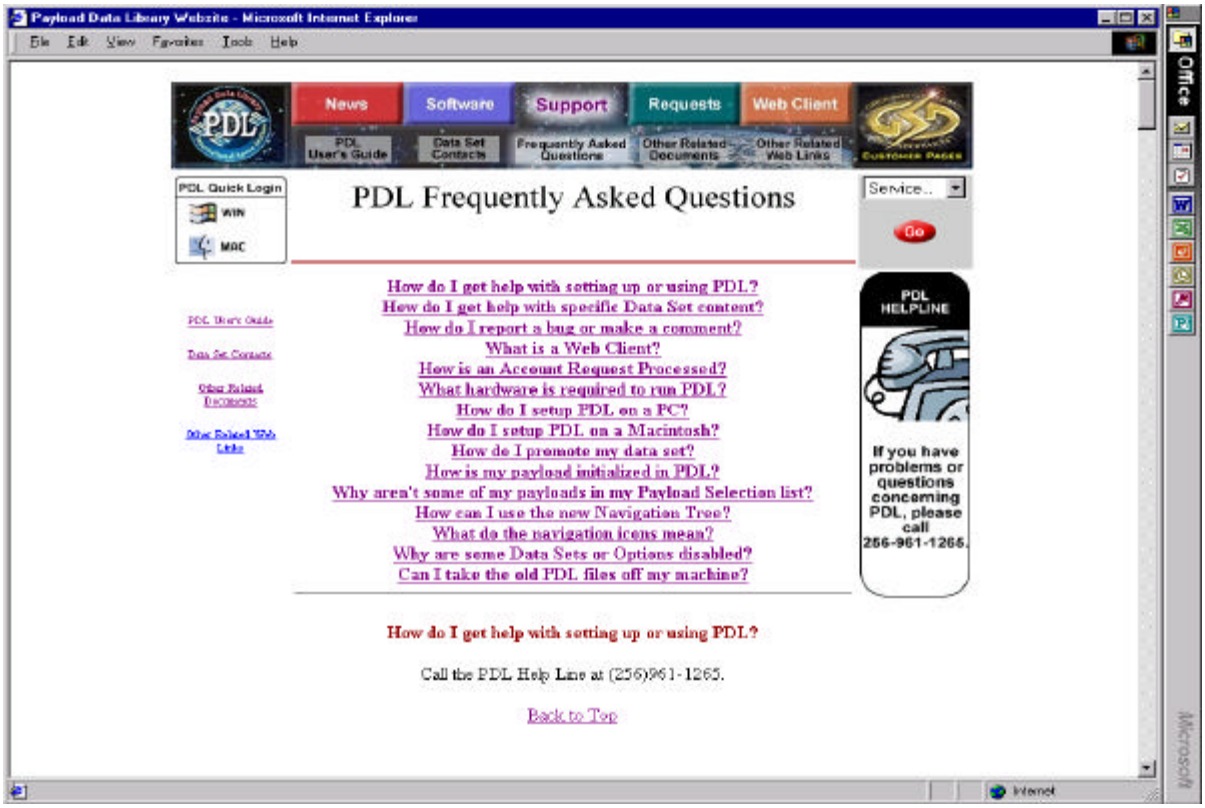

FIGURE 4-12 FREQUENTLY ASKED QUESTIONS PAGE

4.2.3.4 Other Related Documents Page

The *Other Related Documents* page contains links to documentation such as the EXPRESS Integration Agreement (EIA) Blank Book and the Generic Payload Verification Plan which directly affect PDL functionality. Figure 4-13 shows an example of a document displayed directly in the right frame after being selected

Be aware that larger documents can be slow to display in the right frame of the page. The speed of delivery is dependent on the size of the document, the memory available on the local machine, and the speed of the network connection and the Internet. Please be patient while the hour glass cursor is displayed.

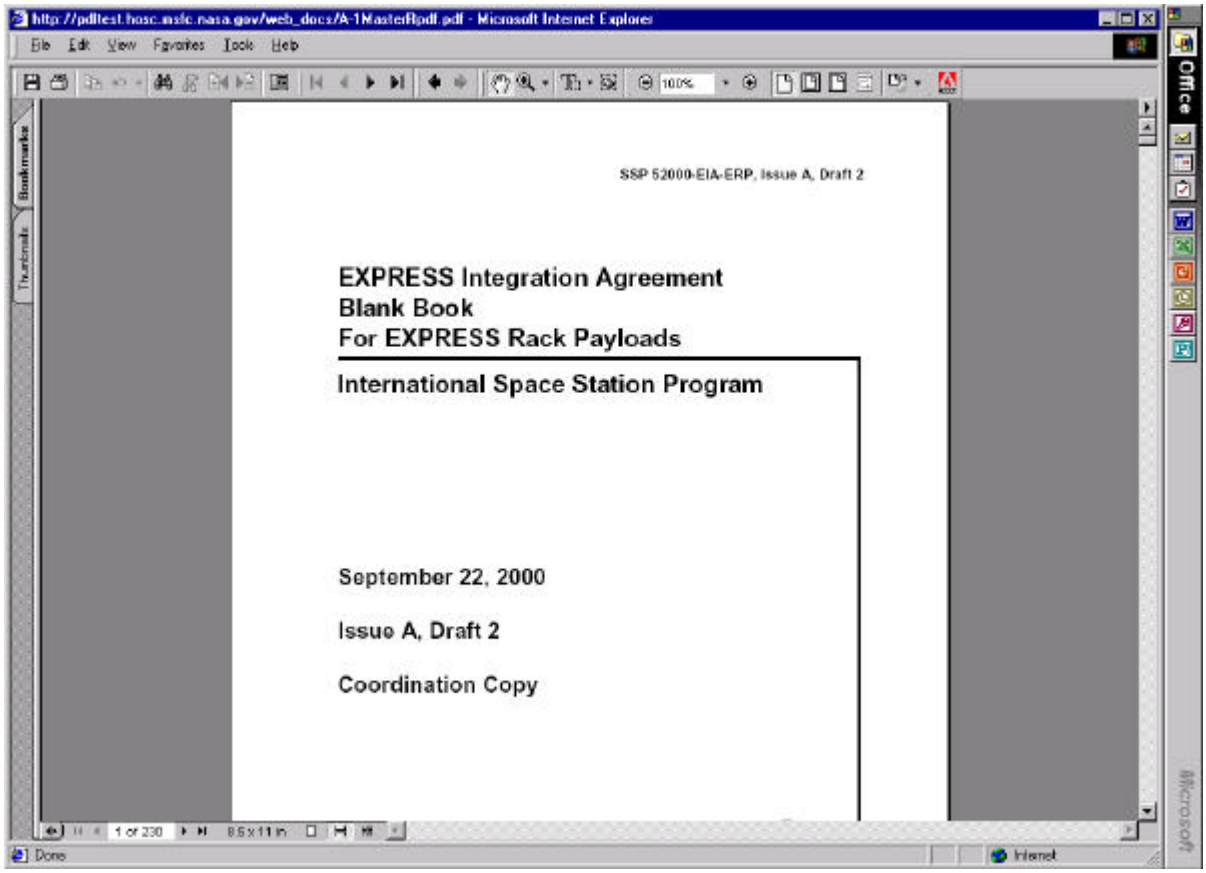

FIGURE 4-13 PDL DOCUMENTATION DISPLAY

Documents which have more than one revision may be moved to a separate page. Figure 4-14 shows the PDL *Documents* page. Click on the names of documents on this page to display them.

FIGURE 4-14 PDL DOCUMENTS PAGE

Documents are usually available for display in PDF format, though some special purpose documents may be in other formats such as PowerPoint. The PDF format requires the Adobe Acrobat Reader software. To download a version of Acrobat Reader the user can select the *Software* main menu item and then select the*Adobe Plug-in*s tab as described in section 4.2.2.3. Follow the Adobe instructions for downloading and installing the Acrobat Reader software.

Some PC versions of Internet Explorer have difficulty displaying documents across the Internet to the Adobe Acrobat Reader. The symptom of this is the right frame of the browser paints white but no document or hourglass cursor is displayed within a reasonable amount of time. If this problem occurs, try downloading the document to your local machine. To do this, use the Back Arrow to return to the *Documents* page. Position your cursor over the name of the document and click the right mouse. A menu will be displayed. Select *Save Target As* and a "Save As" box will appear. Pick a location on your local machine and click

the *Save* button. The file will download. Use the Adobe Acrobat Reader to open the document file on your hard drive.

4.2.3.5 Other Related Web Links Page

The *Other Related Web Links* page contains web page addresses for other ISS web pages which might be of interest to the PDL user. Figure 4-15 shows the graphic that is displayed when the *Other Related Web Links* tab is selected. The user can click on the acronym of another ISS-related group or system to jump to their web page. Most of the web pages referenced are public pages viewable by all Internet users. However, some of the links lead to web pages which require an account to access. If an account is required on another system, please contact the owner of that page for information about gaining access to their website. Contact information is usually available at the bottom of the page.

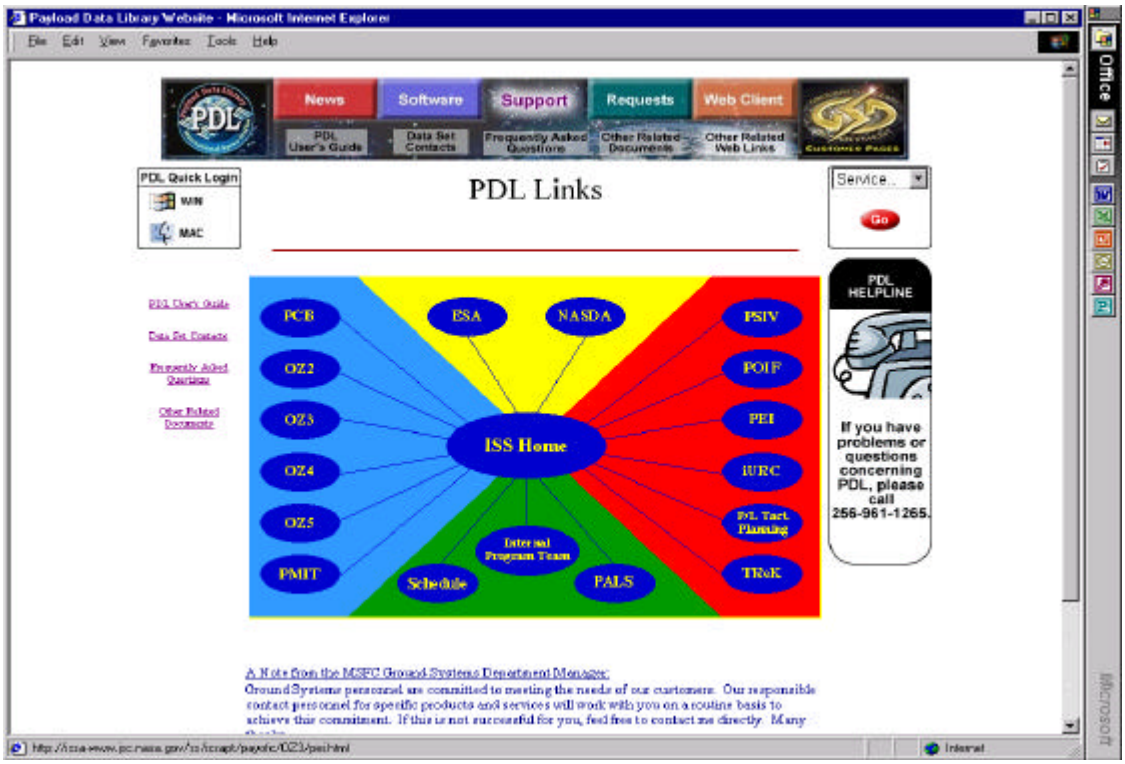

FIGURE 4-15 WEB LINKS PAGE

4.2.4 Request Pages

The PDL *Request* page shown in Figure 4-16 allows a non-PDL user to request a PDL user account. There are two kinds of PDL accounts: Payload Developer and ISS Integrator. These are discussed in more detail in the followingsub-sections. The Request page also allows a PDL user to request a special PDL report which is also discussed below. The Report Request page is a user page and can *only* be reached by a user who already has a PDL user account

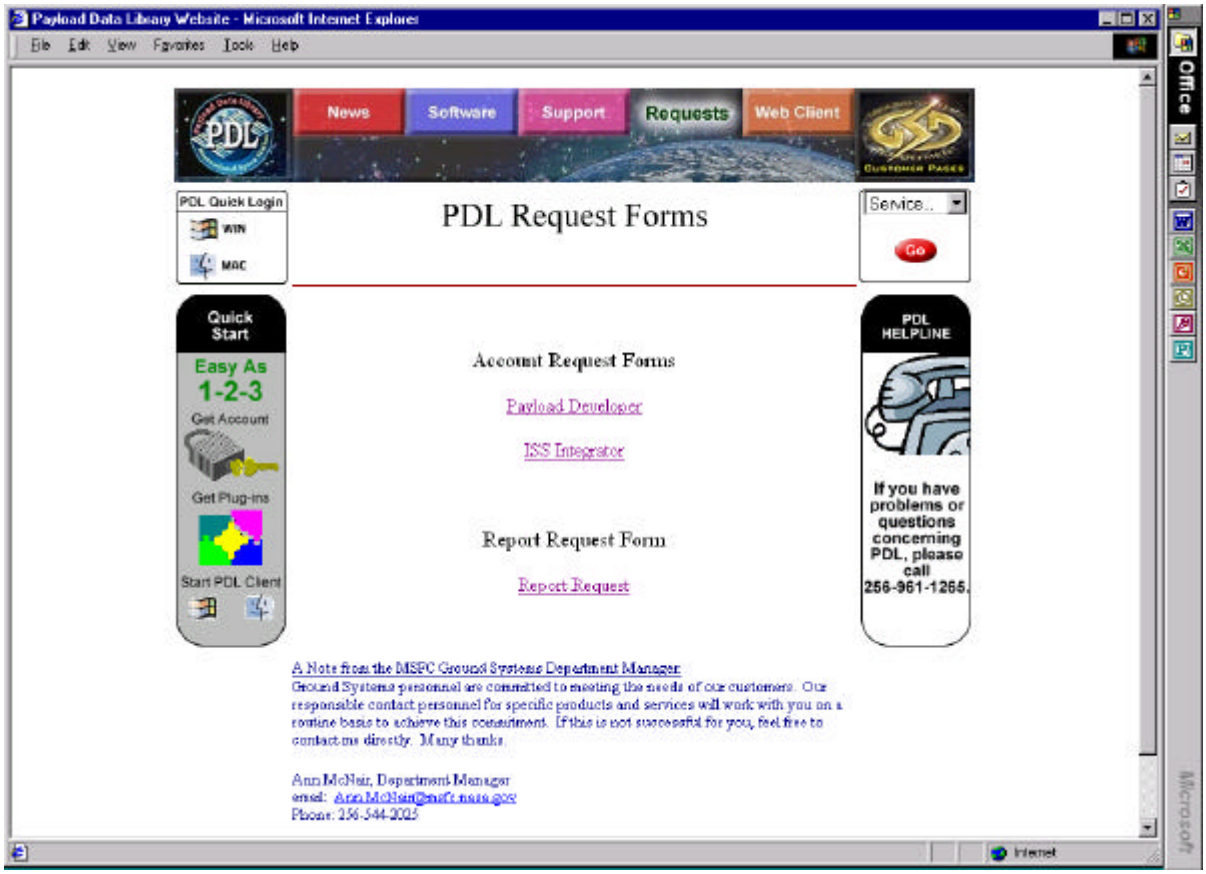

FIGURE 4-16 PDL REQUEST PAGE

4.2.4.1 Account Request - Payload Developer

The Payload Developer Account Request Form should be filled in by people who need to use PDL to load payload development type data for payload integration. Because of the large number of possible payloads, the page is longer than can be displayed on a single screen. Use the scroll bar on the right of the browser window to scroll down through all of the fields on the page. The following three figures combine to make up the Payload Developer Account Request Form.

Figure 4-17 shows part of the top portion of the Payload Developer Account Request Form. The user should select one or more payloads to which he/she is affiliated. Click the box to the left of the payload name to select it. At least one payload must be selected. Payloads are divided between Express payloads and Pressurized payloads. Payload names are alphabetical within each grouping.

Note: the user may NOT select all payloads. An error condition will occur. The user should select only those payloads to which he/she is affiliated. The NASA appointed point of contact for the selected payload(s) will be contacted for authorization prior to a PDL account being issued to the user.

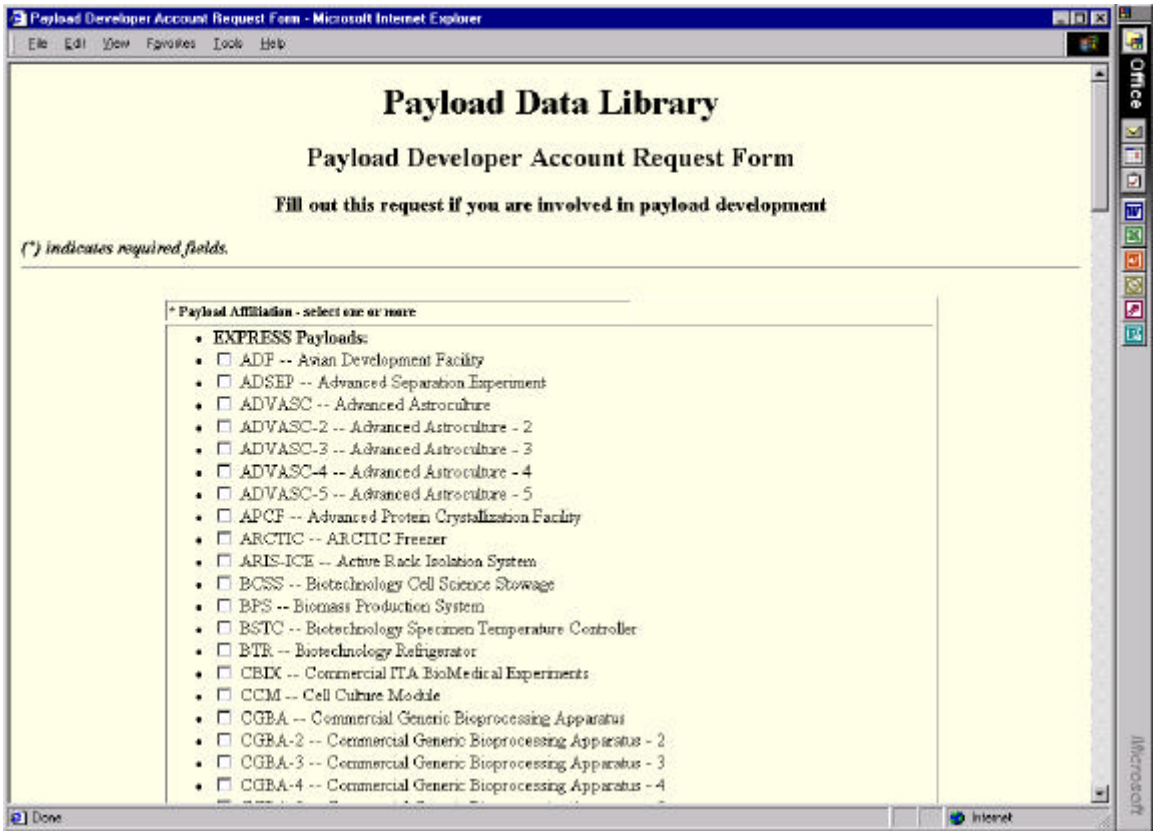

FIGURE 4-17 PAYLOAD ACCOUNT REQUEST, PAYLOAD AFFILIATION

At the bottom of the list of selectable payloads is a field called “Specify Other Payloads.” If the user’s payload does not appear on the page, the user should check the selection box to the left of the label and type the name of the payload into the data entry field. Figure 4-18 shows the “Specify Other Payloads” option at the end of the list of payloads.

Figure 4-18 also shows the next section of the Payload Developers Account Request form, the selection of the user’s Dataset/Discipline. If a user only requires Read-Only access to the payload(s) selected above, click the “If Read-Only access required” box. Otherwise, the user should check one or more boxes corresponding to the user’s area of responsibility.

Note: If access to all datasets/disciplines is requested, the user should check the “All Disciplines” box. The user should not select any other datasets because they are included in the “All.”

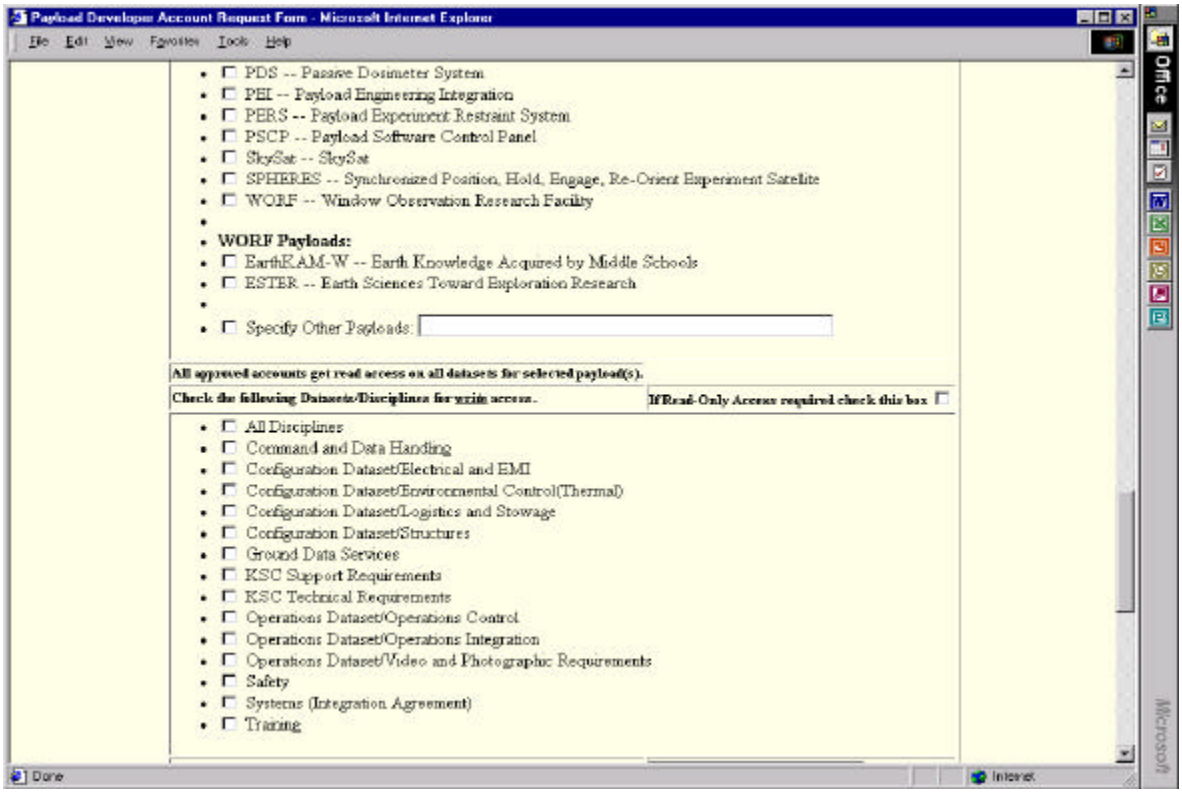

FIGURE 4-18 PAYLOAD ACCOUNT REQUEST, DATASET/DISCIPLINE

Figure 4-19 shows the fields which collect data about the user. Fields which are marked in bold text and by an asterisks (*) are required and must be filled in.

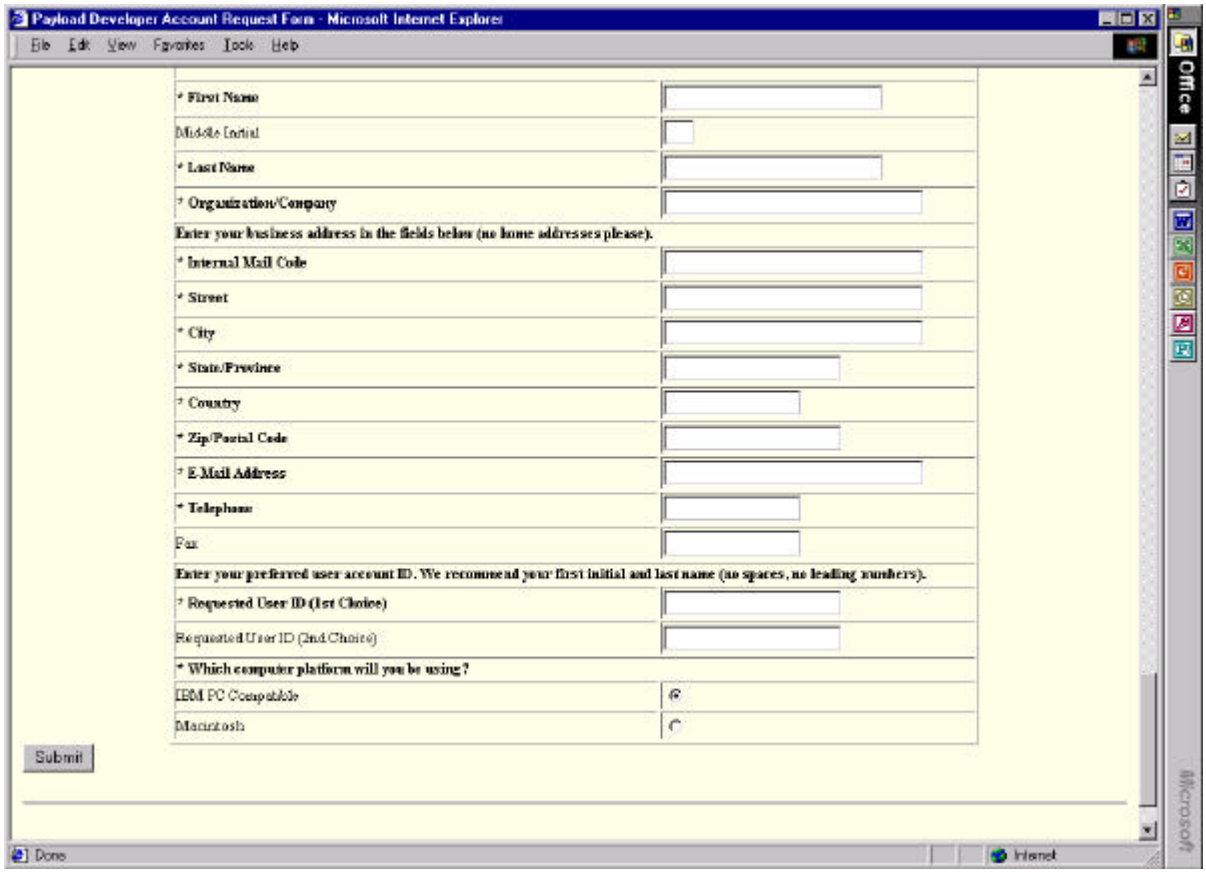

FIGURE 4-19 PAYLOAD ACCOUNT REQUEST, USER INFORMATION

Notice that the address to be entered is the user's business address. The Internal Mail Code field is required so it must be filled in. If the user does not have a special code for mail distribution, please enter "None" in this field.

An email address is also required because PDL information messages and system interruption warnings are sent via email. The user is allowed to select an account ID. This makes it possible for the user to have the same ID for PDL as on their local computer network, making it easier to remember. In case that account ID has already been assigned to another user, the user is encouraged to enter a second choice for an ID. At the bottom of the form, the user should select which computer platform they will be using.

After all fields have been entered, the user should click on the*Submit* button to submit the account request. If a required field has been left blank, the user will see an error message

reporting which field must be filled in. The user should use the Back key or arrow on their browser to return to the account request page to correct the error.

If all fields have been filled and the account request successfully submitted, a page will be displayed with the message: *"Your Account Request has been submitted. You will be contacted when it is approved. Any questions? Please call the PDL Helpline at (256) 961-1265."* The NASA approved payload coordinator(s) will be contacted for authorization prior to a PDL account being issued to the user.

4.2.4.2 Account Request - ISS Integrator

The Integration Account Request Form should be filled in by people who need to use PDL to perform ISS integration activities. The following two figures combine to make up the Integration Account Request Form. The scroll bar on the right of the browser window can be used to scroll down through all of the fields on the page.

Figure 4-20 shows the top portion of the Integration Account Request Form. The user should select one or more disciplines or datasets to which he/she is assigned. Click the box to the left of the dataset/discipline to select it. If the user only needs Read-Only Access to PDL, please check the Read-Only box on the right. Otherwise, at least one dataset/discipline must be selected.

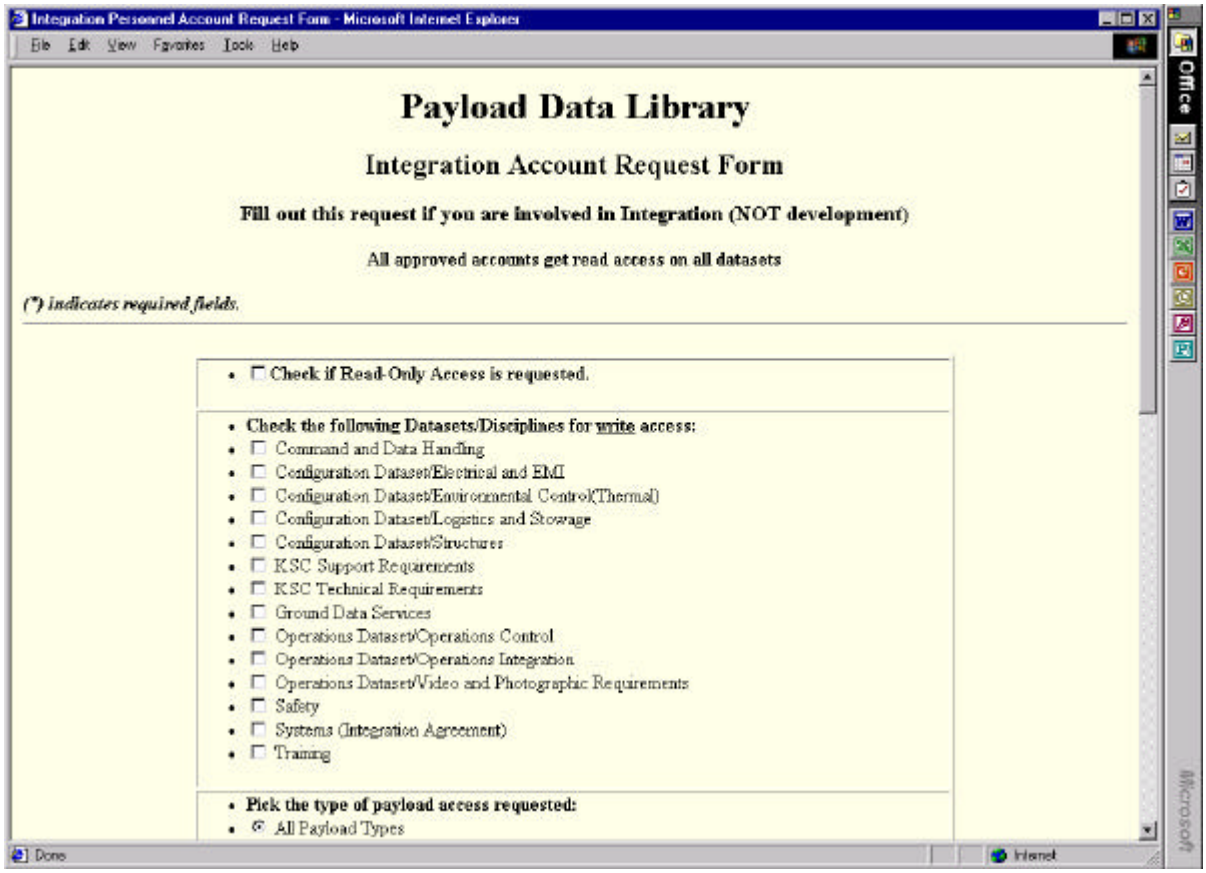

FIGURE 4-20 INTEGRATION ACCOUNT REQUEST, DATASET/DISCIPLINE

Figure 4-21 shows the fields which collect data about the user. Fields which are marked with bold text and by an asterisks (*) are required and must be filled in.

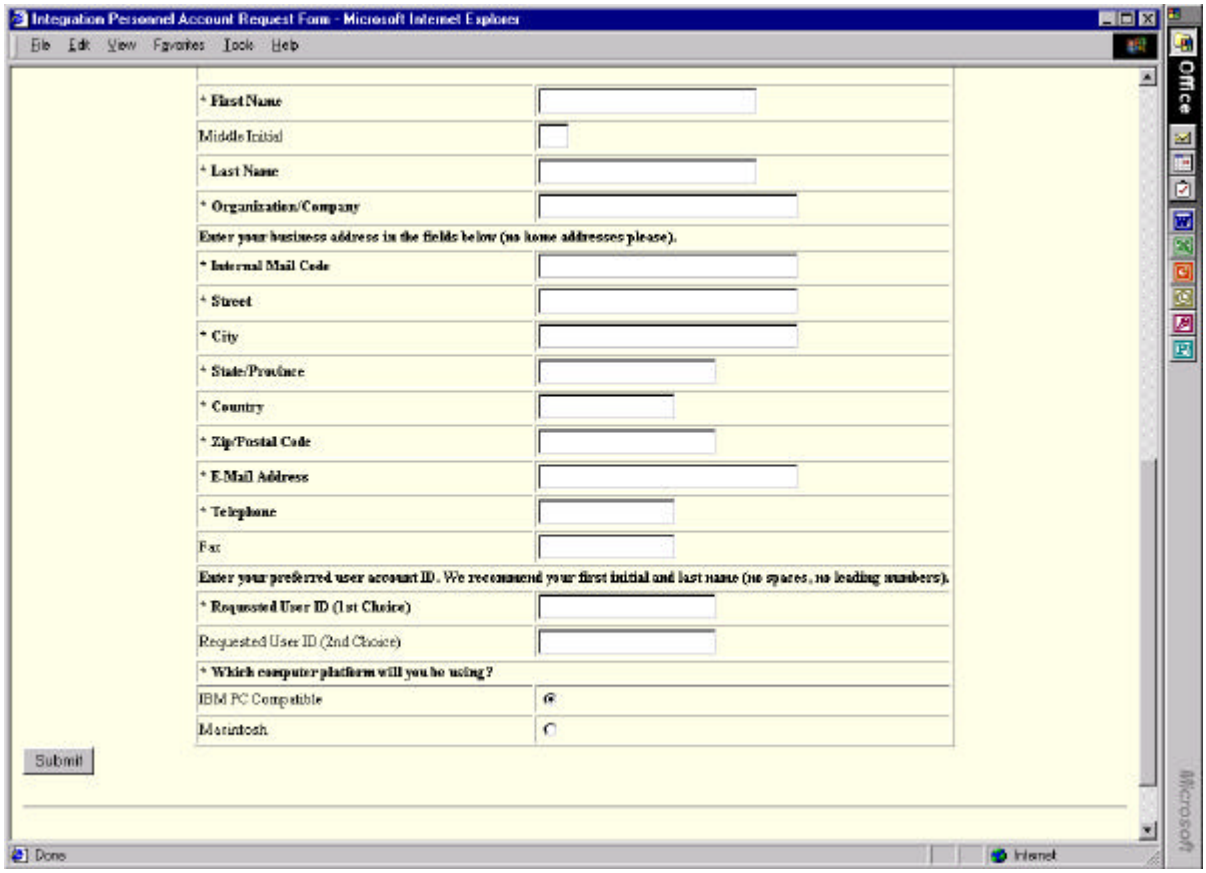

FIGURE 4-21 INTEGRATION ACCOUNT REQUEST, USER INFORMATION

Notice that the address to be entered is the user's business address. The Internal Mail Code field is required so it must be filled in. If the user does not have a special code for mail distribution, please enter "None" in this field.

An email address is required to allow PDL information messages and system interruption warnings to be sent via electronic messaging. The user is allowed to select an account ID. This makes it possible for the user to have the same ID for PDL and their local computer network. In case that account ID has already been assigned to another user, the user is encouraged to enter a second choice for an ID. At the bottom of the form, the user should click on what kind of system they will be using.

After all fields have been entered, the user should click on the*Submit* button to submit the account request. If a required field has been left blank, the user will see an error message reporting which field must be filled in. The user should use the Back key or arrow on their browser to return to the account request page to correct the error.

If all fields have been entered and the account request is successfully submitted, a page will be displayed with the message: *'Your Account Request has been submitted. You will be contacted when it is approved. Any questions? Please call the PDL Helpline at (256) 961-1265.*" The NASA approved data set coordinator(s) will be contacted for authorization prior to a PDL account being issued to the user.

4.2.4.3 Report Request Page

The Reports Request page is a "User's" page and can be used to request new reports for inclusion in PDL. A PDL logon box will appear on top of the current window as discussed in Section 4.1.2. The user must enter a PDL user name and password before the Report Request Form is displayed. Figure 4-22 shows the top part of the Report Request Form. Fields that require data entry are indicated by bold text and an asterisks (*).

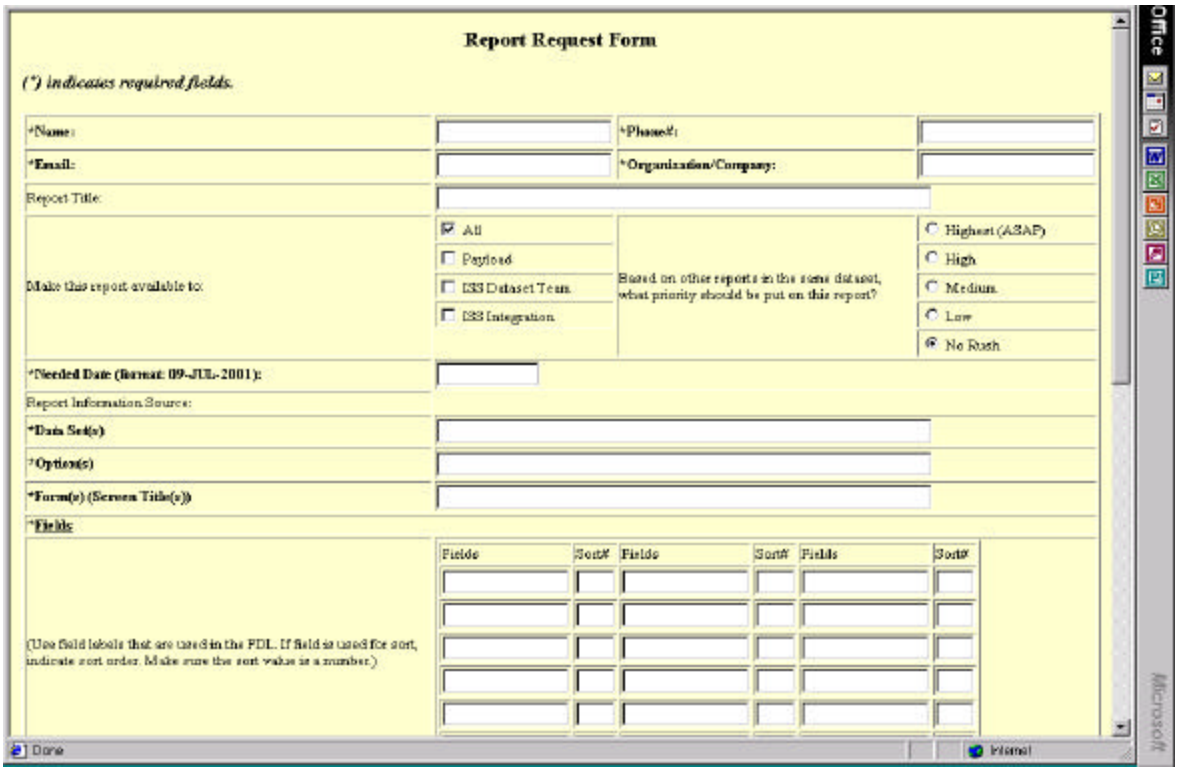

FIGURE 4-22 PDL REPORT REQUEST, TOP

The top of the Report Request page asks for contact information about the user who is submitting the request. This will be used in the event more information is needed for development.

A Report Title can be entered. Next, the user must decide what categories of users should have access to this report. For scheduling purposes, the user is asked to prioritize this report. This requires the user to enter a date in the *Needed Date* field.

The rest of the report requests form requests information about the report content and how it should be organized. The user will be asked for the Data Set to which the report pertains. Enter the name of one of the data sets found on the Navigation Tree (see Figure 3-26). For the Option, enter one of the options available on the Navigation Tree after the data set has been selected (see Figure 3-26). In PDL when the user has selected a data set and an option, a list of possible data entry screens becomes visible on the Navigation Tree (see Figure 3-26). One or more of these forms contains the data that should appear in the report. Enter the name of the form(s) in the *Forms(s) (Screen Title(s))* field on the Report Request Form.

For the C&DH dataset enter one of the options that will appear above the tab menu as shown in Figure 3-51 (i.e., CDH Dataset Option, Services, PL Info, etc). For the *Form(s) (Screen Title(s))* field enter the form name available on the actual tab menu as shown in Figure 3-51 (i.e., PL Data, Rack Data, Telemetry, etc.).

The user will then enter the data items that should appear in the report. Use the name of the data item as it appears labeled on a PDL form. You can enter a data item field name up to 30 characters long. If the field should be used to organize or sort the report, put a sequence number into the *Sort#* box. If more than one field should be included in the sort (i.e., sort first by Payload and then by Flight), enter the numbers in order of the field's importance to the ordering of the report. Figure 4-23 shows the bottom half of the Report Request page. Use the scroll bar on the right side of the browser window to reach these fields.

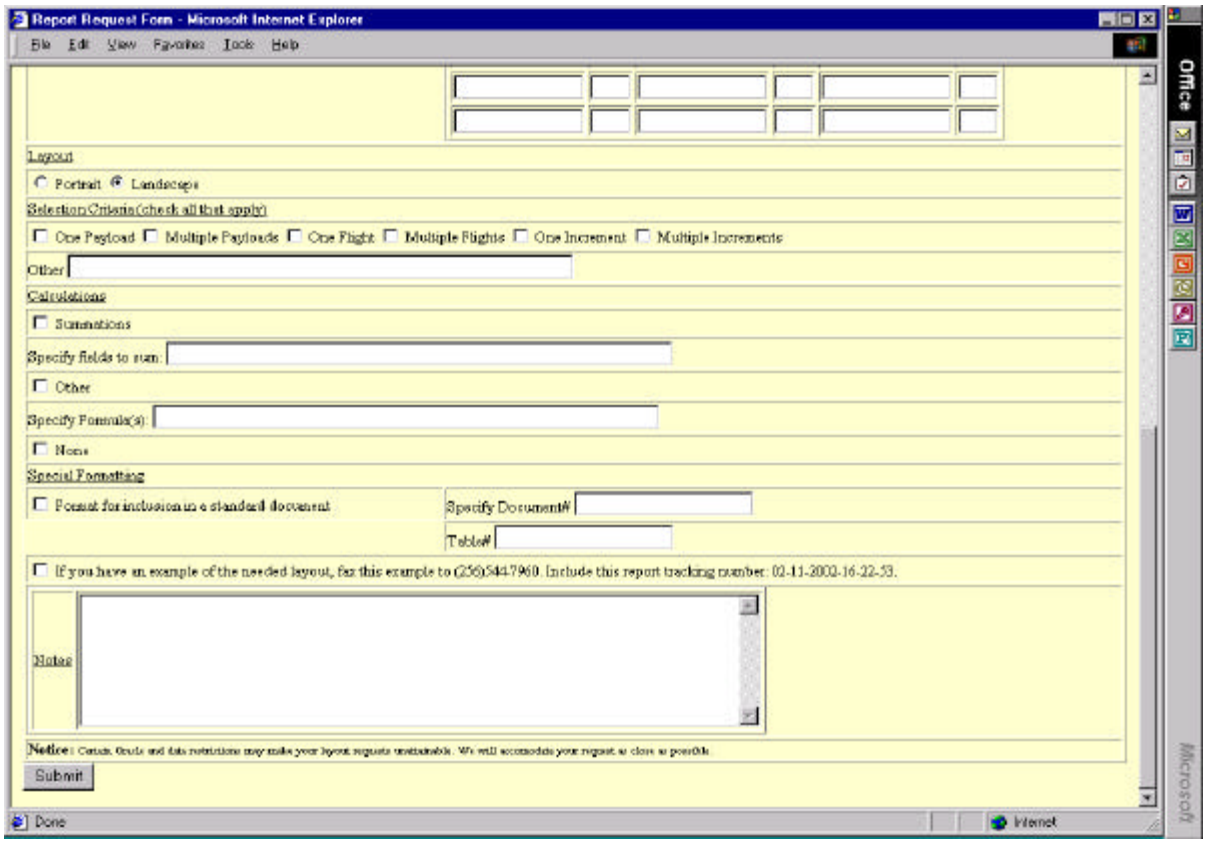

FIGURE 4-23 PDL REPORT REQUEST, BOTTOM

For the Layout section, click the button to indicate whether the layout of the report should be Portrait (narrow side of paper is up as the report is read) or Landscape (wide side of paper is up).

For Selection Criteria section, click on one or more fields to describe all the possible combinations of payloads, flights, and increments that can be used to select data for this report. If none of these criteria fit the new report, use the *Other* data entry field to describe how data should be collected for the report. This field has a maximum length of 100 characters.

In the Calculation section, if fields should be summed, check the *Summations* box and enter the names of the fields to be summed. If another formula should be applied to certain fields, check the *Other* box and enter the fields and the formula to be used for the calculation. If no summations or calculations are needed, check the *None* box.

For the Special Formatting section, if the new report has a required format or is intended for inclusion in a standardized document, please check the *Format for inclusion in a standard document* box. In addition, include the document number where the format can be found and the table number within that document that identifies how the new report should be formatted. If possible, please fax a copy of the standardized format or table to the PDL Fax Number: (256) 544-7960. At the top of the report or in the explanation, please include the tracking number visible on the Report Request Form. The tracking number is required for matching the fax page to the information entered into the PDL database from the Report Request form. Please check the box on the screen if a fax is being sent to PDL.

Any additional information about the report can be entered in the Notes field. This field has a maximum length of 1000 characters.

When the fields on the Report Request page have been filled in, click on the *Submit* button to send the request to PDL. Please notice the disclaimer at the bottom of the page. PDL will make every effort to accommodate the request, but some reports may be restricted by the data currently being collected in PDL or by limitations imposed by the Oracle database. Every effort will be made to produce the report as requested.

4.2.5 Web Client Page

The Web Client Page contains information on getting started with running the PDL web client. It also has links to the PC or Mac web clients. To access the web clients, a user must posses an account. Refer to Section 4.2.4 on requesting a PDL account.

The complete PDL web application can be run across the Internet from the PDL website. This means that the PDL user does not have to load any PDL software on his/her local machine. Refer the Section 3 for instructions on logging into PDL.

4.2.5.1 Getting Started

Selecting the *Getting Started* tab will give you instructions on starting your PC or Mac, running the web client on your PC or Mac, minimum PC and Mac hardware requirements, obtaining a PDL account, and a brief explanation of a what a web client is, as shown in Figure 4-24.

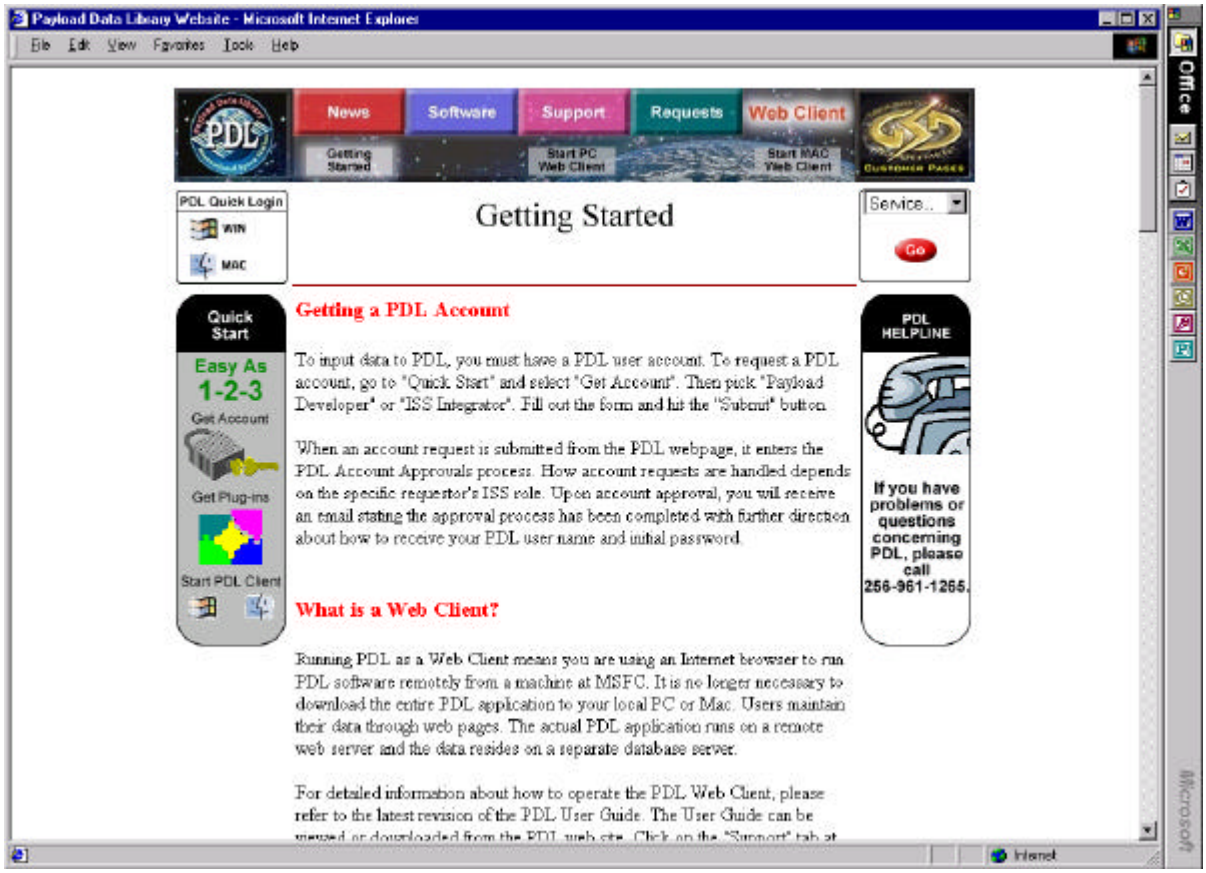

FIGURE 4-24 GETTING STARTED

4.2.5.2 Start PC Web Client

After selecting *Start PC Web Client* tab in the navigation menu or by selecting *WIN* in the *PDL Quick Login* or the windows icon in the *Quick Start*, a second window will be started in front of the browser window. This window will contain the logon for the PDL web client (see Figure 3-2). Once the user has logged on to PDL, the PDL application will run in the new window. The web client software is running on the PDL webserver machine instead of on the user's local machine and requires the Internet connection to function.

Here are some guidelines for running the PDL web client. Since the website starts the PDL web client in a separate window, each window that is displayed on the screen requires machine memory. If the PDL application seems slow, try closing other applications that may also be running on the local machine. This will free up machine resources. If the window is too small, part of a PDL form may not display. If the right side of the screen is blank or gray,

it is likely that the window in which the PDL web client is running is not large enough. Click the cursor on the lower right corner of the window and drag it larger. The window should repaint itself with the full PDL form. If only part of a form is displayed, it may be necessary to first use the cursor to drag the window larger and next use the cursor to drag the form within the window larger.

In order to run the PDL web client, it is necessary for the user's local machine be able to support the running of Java applets across the Internet. If the user is having trouble starting the PDL web client, it may be because Java cannot run. PC users will need to install the Oracle J-Initiator software. Refer back to Section 4.2.2 on how to install the necessary plug-ins.

4.2.5.3 Start MAC Web Client

After selecting *Start Mac Web Client* tab in the navigation menu or by selecting *MAC* in the *PDL Quick Login* or the Macintosh icon in the *Quick Start*, a second window will be started in front of the browser window. This window will contain the logon for the PDL web client (see Figure 3-2). Once the user has logged on to PDL, the PDL application will run in the new window. The web client software is running on the PDL webserver machine instead of on the user's local machine and requires the Internet connection to function.

The same guidelines above apply for running the PDL web client for the Mac as for the PC. However, Mac users will need the MacOS Runtime for Java (MRJ). Refer back to Section 4.2.2 on how to install the necessary plug-ins.

APPENDIX A

ABBREVIATIONS AND ACRONYMS

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APPENDIX A, ABBREVIATIONS AND ACRONYMS

CAD	Computer-Aided Design
C&DH	Command and Data Handling
CM	Configuration Manager
CSA	Canadian Space Agency
DSM	Dataset Manager
E&OI	Engineering and Operations Integration
EI	Engineering Integration
EIA	EXPRESS Integration Agreement
ESA	European Space Agency
EVA	Extra Vehicular Activity
EVR	Extra Vehicular Robotics
EXPRESS	EXpedite the PRocessing of Experiments to Space Station
FAQ	Frequently Asked Questions
FD	Flight Projects Directorate
FTP	File Transfer Protocol
GUI	Graphical User Interface
HOSC	Huntsville Operations Support Center
ICD	Interface Control Document
ID	Identification
IE	Integration Engineer
ISS	International Space Station
JSC	Johnson Space Center
KSC	Kennedy Space Center
MAC	Macintosh
MB	Megabyte
MHz	Megahertz
MRJ	MacOS Runtime for Java
MSFC	Marshall Space Flight Center
NASA	National Aeronautics and Space Administration

NASDA	National Space Development Agency of Japan
NT	New Technology
OS	Operating System
PC	Personal/Portable Computer
PCI	Payload Configuration Integration
PD	Payload Developer
PDL	Payload Data Library
PEI	Payload Engineering Integration
PL/ID	Payload ID
POP	Payload Operation Performance
PSIV	Payload Software Integration Verification
PVP	Payload Verification Plan
RAM	Random Access Memory
RDBMS	Relational Database Management System
SE/ID	Sub-element ID
SSP	Space Station Program
UMDB	User Mission Database
WORF	Window Observational Research Facility
WWW	World Wide Web